Ingestion of different protein sources before sleep to promote muscle protein synthesis after endurance exercise in young men

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1) Pre-sleep whey protein ingestion stimulates overnight muscle protein synthesis rates 2) Pre-sleep casein protein ingestion stimulates overnight muscle protein synthesis rates 3) Pre-sleep whey and casein protein do not differ in their impact...

Ethische beoordeling	Niet van toepassing
Status	Anders
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON27053

Bron
Nationaal Trial Register

Verkorte titel
PROsleepMITO

Aandoening

- Milk protein

- Protein digestion

- Protein synthesis

Ondersteuning

Primaire sponsor: Maastricht University
Overige ondersteuning: Campina

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Overnight muscle protein synthesis rates

Toelichting onderzoek

Achtergrond van het onderzoek

A single session of exercise stimulates muscle protein synthesis rates, and to a lesser extent, muscle protein breakdown rates. However, the muscle protein net balance will remain negative
in the absence of food intake. Protein ingestion stimulates muscle protein synthesis and inhibits
muscle protein breakdown rates, resulting in net muscle protein accretion during the acute stages of post-exercise recovery. Therefore, post-exercise protein ingestion is widely applied as a strategy to augment post-exercise muscle protein synthesis rates and, as such, to facilitate the skeletal muscle adaptive response to exercise training. As overnight sleep is typically the longest post-absorptive period during the day, we have recently introduced the concept of protein ingestion prior to sleep as a means to augment muscle protein synthesis during overnight recovery following resistance-type exercise. However, it is currently unknown whether pre-sleep protein also promotes overnight recovery following other exercise modalities and whether the type of ingested protein modulates the response. Therefore, the current study investigates the impact of the ingestion of different protein source before sleep to promote muscle protein synthesis after endurance exercise.

Doel van het onderzoek

1) Pre-sleep whey protein ingestion stimulates overnight muscle protein synthesis rates

2) Pre-sleep casein protein ingestion stimulates overnight muscle protein synthesis rates

3) Pre-sleep whey and casein protein do not differ in their impact on overnight muscle protein synthesis rates.

Onderzoeksopzet

- Overnight MPS (computed from biopsy at t=0 and t=450 min)

- Plasma amino acid concentrations: t0, t30, t60, t90, t150, t210, t330 and t450 min)

Onderzoeksproduct en/of interventie

1) pre-sleep whey protein ingestion

2) pre-sleep casein protein ingestion

3) water placebo ingestion

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

- Males

- Aged between 18-35 years

- Healthy

- 18.5 ≤ BMI ≤ 30 kg/m2

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- Smoking

- Sports/exercise > 4 sessions/week

- Lactose intolerant

- A history of neuromuscular problems

- Use of anticoagulation medication

- Recent (<1 y) participation in amino acid tracer [13C6 or 3,5-D2-tyrosine] studies

- Individuals on any medications known to affect protein metabolism (i.e. corticosteroids, non-steroidal anti-inflammatories, or prescription acne medications)

Onderzoeksopzet

Opzet

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

Deelname

Nederland

Status:	Anders
(Verwachte) startdatum:	01-08-2018
Aantal proefpersonen:	36
Type:	Onbekend

Ethische beoordeling

Niet van toepassing
Soort: Niet van toepassing

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 50719
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL7046
NTR-old	NTR7251
CCMO	NL64719.068.18
OMON	NL-OMON50719

Resultaten