Training en eiwit om gezond ouder te worden

No registrations found.

Ethical review	Not applicable
Status	Pending
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON25434

Source
Nationaal Trial Register

Health condition

Sarcopenia, anabolic resistance, muscle protein synthesis.
Sarcopenie, anabole resistentie, spiereiwitsynthese.

Sponsors and support

Primary sponsor: NUTRIM, Maastricht University
TI Food and Nutrition
Source(s) of monetary or material Support: TI Food and Nutrition

Intervention

Outcome measures

Primary outcome

Muscle protein synthesis rates

Secondary outcome

Whole-body protein metabolism and measures of digestion and absorption kinetics

Study description

Background summary

Rationale: The progressive loss of skeletal muscle mass with aging, or sarcopenia, has a major impact on our health care system due to increased morbidity and a greater need for hospitalization and/or institutionalization. It is clearly established that a combination of a resistance exercise program and adequate dietary protein intake are both effective measures to stimulate protein synthesis and counteract sarcopenia. With regards to optimally stimulating muscle protein synthesis, it is also understood that the short time period immediately following a resistance exercise session is the most opportune time to ingest a bolus of dietary protein. What is less understood, however, is the optimal amount of dietary protein that is required to maximize the stimulation of post-exercise muscle protein synthesis in elderly individuals.

Objective: To identify the amount of dietary protein that will optimally stimulate post-exercise muscle protein synthesis in the older population.

Study design: double-blind, placebo-controlled intervention study

Study population: 60 healthy lean (BMI 18.5-30 kg/m2) older males (age: 55-80 y)

Intervention: A beverage (500 mL) containing milk protein in the amount of 0, 15, 30, 45 g protein or 15 g + 1.5 g leucine (n=12 per group) will be ingested immediately after a single resistance exercise session. The exercise bout will consist of a 5-minute warm-up on a cycle ergometer, followed by 3 sets of chest press and lat pulldown and 4 sets of leg-press and leg-extension. Muscle biopsies will be taken and blood will be drawn at several time points during the day.

Main study parameters/endpoints: Primary study parameters are the rates of muscle protein synthesis. Secondary study parameters include whole-body protein synthesis, breakdown, oxidation, and net balance.

Study objective

We hypothesize that ingesting 30 g of milk protein will have an optimal effect in stimulating post-exercise muscle protein synthesis when compared to 0, 15 and 45 g milk protein. In addition, we hypothesize that co-ingestion of 1.5 g additional free leucine with 15 g of milk protein will be as effective in stimulating post-exercise muscle protein synthesis compared to 30 g of milk protein.

Study design

t=0 hrs drink, t=0 and t=6hrs muscle biopsy.

12 blood draws.

Intervention

Exercise bout and protein drink

Contacts

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Eligibility criteria

Inclusion criteria

• Healthy males
• Age between 55 and 80 y
• BMI between 18.5 and 30 kg/m2

Exclusion criteria

• Celiac disease
• Lactose intolerance
• Smoking
• Diabetes
• Cancer
• Cardiovascular Disease
• Donated blood within the last 3 months
• Diagnosed GI tract diseases
• Arthritic conditions
• A history of neuromuscular problems
• Any medications known to affect protein metabolism (i.e. corticosteroids, non-steroidal anti-

inflammatories, or prescription strength acne medications).
• Participation in exercise program
• Hypertension, high blood pressure that is above 140/90 mmHg.

Study design

Design

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

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-05-2014
Enrollment:	75
Type:	Anticipated

Ethics review

Not applicable

Application type:	Not applicable

Study registrations

Followed up by the following (possibly more current) registration

ID: 41601
Bron: ToetsingOnline
Titel:

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

No registrations found.

In other registers

Register	ID
NTR-new	NL4254
NTR-old	NTR4492
CCMO	NL47671.068.14
OMON	NL-OMON41601

Study results