The impact of ingesting milk versus free amino acids on muscle protein synthesis in healthy young adults

No registrations found.

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

Summary

ID

NL-OMON21980

Source
Nationaal Trial Register

Brief title
MILK-AA

Health condition

Muscle protein synthesis; protein; milk; free amino acids

Sponsors and support

Primary sponsor: Maastricht University
Source(s) of monetary or material Support: Maastricht University

Intervention

Outcome measures

Primary outcome

muscle protein synthesis (MPS) rates

Secondary outcome

Secondary endpoints include whole-body protein metabolism (synthesis, breakdown, oxidation, and net balance)

Study description

Background summary

Previous studies suggest that the form of dietary protein that is ingested can differentially facilitate protein digestion and absorption, increase plasma AA availability, and thereby augment the postprandial muscle protein synthetic response. For example, a more rapid increase in circulating plasma AA concentrations has previously been reported after the ingestion of a protein hydrolysate when compared with an intact protein. However, no significant difference in postprandial muscle protein synthesis was observed following the ingestion of a protein hydrolysate when compared to an intact protein. The objective of this research is to assess the anabolic response following ingestion of milk and free amino acids in vivo in young adults.

Study objective

The ingestion of free amino acids will result in higher plasma amino acid concentrations, resulting in enhanced muscle protein synthesis rates when compared with the ingestion of milk.

Study design

muscle biopsies at: -120, 0, 120, 360

blood drawn at: -210, -120, -90, -60, -30, 0, 15, 30, 45, 60, 75, 90, 105, 120, 150, 180, 210, 240, 300, 360

Intervention

milk versus free amino acids

Contacts

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Eligibility criteria

Inclusion criteria

1) Aged 18-35 y

2) BMI 18.5-27.5 kg/m2

3) Healthy, recreationally active, young adults

Exclusion criteria

1) Allergies to milk protein

2) Lactose intolerance

3) PKU disease

4) Smoking

5) Diagnosed diabetes

6) Diagnosed metabolic or intestinal disorders

7) A history of neuromuscular problems

8) Any medications known to (or may) affect protein metabolism (i.e. corticosteroids, non-steroidal anti-inflammatories, or prescription strength acne medications)

9) Participation in structured resistance exercise program

10) Pregnant

11) Hormone replacement therapy

12) Third generation oral contraceptives

13) Strict vegetarian

Study design

Design

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	25-01-2018
Enrollment:	24
Type:	Anticipated

Ethics review

Positive opinion

Date:	09-01-2018
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

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

No registrations found.

In other registers

Register	ID
NTR-new	NL6764
NTR-old	NTR6941
Other	NL63767.068.17 : METC173047

Study results