The evaluation of cheese vs milk for stimulating post-prandial and post-exercise muscle protein synthesis

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON28444

Source
NTR

Brief title
Cheese study

Health condition

Muscle mass growth; which can be related to sarcopenia

Sponsors and support

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

Intervention

Outcome measures

Primary outcome

MPS and plasma AA availability

Secondary outcome

whole-body protein synthesis, breakdown, oxidation, and net balance, plasma glucose and insulin, and metabolic signalling

Study description

Background summary

An important determinant to maintain and/or increase skeletal muscle mass in rest and after (resistance) exercise is dietary protein intake. In this regard, milk protein has been studied frequently and is considered as a high-quality protein source. However, little is known about other milk-derived protein sources such as cheese. Therefore, the aim of the present study is to assess the capacity of cheese to stimulate post-prandial and post-exercise skeletal muscle protein synthesis and support protein anabolism in vivo in humans.

Study objective

We hypothesize that the ingestion of cheese will increase post-prandial muscle protein synthesis at rest and will be even higher following exercise when compared to basal. In addition, we hypothesize that cheese ingestion will result in lower rates of muscle protein synthesis when compared to milk protein.

Study design

Muscle biopsies taken at -150,0 and 240 min with frequent bloopsampling

Intervention

Exercise and milk/cheese protein intake

Contacts

Public
Maastricht University, Dep. Human Biology
Wesley Hermans

0433881810
Scientific
Maastricht University, Dep. Human Biology
Wesley Hermans

0433881810

Eligibility criteria

Inclusion criteria

• Healthy males
• Age between 18 and 35 y inclusive
• BMI between 18.5 and 30 kg/m2

Exclusion criteria

• Allergies to milk proteins
• Lactose intolerant
• Smoking
• Phenylketonuria
• Diabetes Mellitus
• Diagnosed GI tract disorders or 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).
• Use of certain anticoagulants (use of thrombocyte aggregation inhibitors such as acetylsalicylic acid and carbasalaatcalcium is permitted. Use of other thrombocyte aggregation inhibitors will be discussed with the responsible physician)
• Blood donation within 2 months of study initiation
• Hypertension (according to WHO criteria)
• Recent participation in amino acid tracer studies (less than 1 year ago)

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	Active

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	07-08-2019
Enrollment:	20
Type:	Actual

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion

Date:	07-08-2019
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	NL7941
Other	METC azM/UM : METC19-015

Study results

Summary results
https://doi.org/10.1093/jn/nxac007