The effects of quark ingestion with or without prior exercise on muscle protein synthesis rates in young and older men.

No registrations found.

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

Summary

ID

NL-OMON22192

Source
Nationaal Trial Register

Brief title
Quark

Health condition

Muscle mass growth; which can be related to sarcopenia

Sponsors and support

Primary sponsor: The collaboration project is co-funded by the PPP Allowance made available by Health~Holland, Top Sector Life Sciences & Health, to stimulate public-private partnerships. Maastricht University and Friesland campina
Source(s) of monetary or material Support: Maastricht University

Intervention

Outcome measures

Primary outcome

Muscle protein synthesis

Secondary outcome

whole-body protein synthesis, breakdown, oxidation, and net balance, plasma amino acids, glucose and insulin, and plasma, L-[ring-13C6]-phenylalanine, L-[ring-13C6]-tyrosine, L-[3,5-2H2]-tyrosine enrichments

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. Especially with aging ingestion of high-quality dietary proteins is a strategy to counteract sarcopenia. 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 quark. Therefore, the aim of the present study is to assess the capacity of quark to stimulate post-prandial and post-exercise skeletal muscle protein synthesis when compared to basal, post-absorptive muscle protein synthesis in young and older males.

Study objective

We hypothesize that the ingestion of quark will increase post-prandial muscle protein synthesis at rest in both young and older men. In addition, we hypothesize that exercise will augment the post-prandial muscle protein synthetic response to quark ingestion in both young and older men.

Study design

Muscle biopsies taken at -150, 0, and 240 min.

Intervention

Exercise and quark intake

Contacts

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Scientific
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Eligibility criteria

Inclusion criteria

• Healthy males
• Age between 18 and 35 y or 65 and 85 y inclusive
• BMI between 18.5 and 30 kg/m2

Exclusion criteria

• Allergies to milk proteins
• Lactose intolerant
• Smoking
• Phenylketonuria
• Diabetes Mellitus (diagnosed, or fasting glucose >7.0 mmol/L, or HbA1c >6.5)
• 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; >90/140 mmHg)
• Recent participation in amino acid tracer studies (less than 1 year ago)
• Physical activity (not training more than 3 times per week and no structured resistance training.)

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	21-02-2020
Enrollment:	29
Type:	Anticipated

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion

Date:	21-02-2020
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	NL8403
Other	METC azM/UM : METC19-074

Study results