

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

Public

Maastricht University
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0433881810

Scientific

Maastricht University
wesley Hermans

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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

NTR-new

Other

ID

NL8403

METC azM/UM : METC19-074

Study results