# Plant proteins for muscle growth

No registrations found.

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

## Summary

### ID

NL-OMON21457

**Source**
Nationaal Trial Register

**Brief title**
APPROS

**Health condition**

Muscle metabolism

Protein

### Sponsors and support

**Primary sponsor:** Maastricht University Medical Center (MUMC+)
**Source(s) of monetary or material Support:** Top Institute of Food and Nutrition (TIFN)

### Intervention

### Outcome measures

#### Primary outcome

Primary study parameter is myofibrillar protein synthesis rate.

#### Secondary outcome

Secondary endpoints will be plasma amino acid concentrations, glucose, and insulin

concentrations.

# Study description

### Background summary

Skeletal muscle mass maintenance is regulated by two main anabolic stimuli, food intake and physical activity. Dietary protein intake directly stimulates muscle protein synthesis rates and inhibits muscle protein breakdown. Therefore, the post-prandial muscle protein synthetic response to feeding plays a key regulatory role in skeletal muscle mass maintenance.

The capacity of dietary protein to stimulate post-prandial muscle protein accretion varies between protein sources. More than half of the total amount of dietary protein that is consumed by humans worldwide is of plant origin, with plant based proteins providing up to 80% of dietary protein consumed in less developed regions. Overall it is assumed that plant based proteins are less potent in stimulating post-prandial muscle protein synthesis. However, the anabolic properties of plant based protein sources have hardly been assessed. Therefore, this project will investigate the anabolic properties of plant based proteins.

### Study objective

It is hypothesized that the ingestion of plant based proteins will result in a similar muscle protein synthetic response compared to animal based proteins.

### Study design

Blood and muscle samples will be collected at regular time intervals.

### Intervention

Subjects will consume 30 g of protein in the form of a beverage.

# Contacts

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# Eligibility criteria

## Inclusion criteria

- Male

- Aged 18-35 y inclusive

- BMI 18.5 – 27.5 inclusive

- Healthy recreationally active

## Exclusion criteria

- Females

- Wheat allergy

- Celiac disease

- Allergies to milk proteins

- Lactose intolerance

- Smoking

- Diagnosed diabetes

- Diagnosed metabolic or intestinal disorders

- A history of neuromuscular problems

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

- Participation in structured resistance exercise program

- Previous participation in a 13C amino acid tracer study within the last 1 year

# Study design

## Design

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

## Recruitment

NL

| | |
|---|---|
| Recruitment status: | Recruitment stopped |
| Start date (anticipated): | 23-05-2017 |
| Enrollment: | 84 |
| Type: | Actual |

## IPD sharing statement

**Plan to share IPD:** Undecided

# Ethics review

Positive opinion

| | |
|---|---|
| Date: | 27-06-2017 |
| Application type: | First submission |

# Study registrations

## Followed up by the following (possibly more current) registration

ID: 50096
Bron: ToetsingOnline
Titel:

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

No registrations found.

## In other registers

| Register | ID |
|---|---|
| NTR-new | NL6364 |
| NTR-old | NTR6548 |
| CCMO | NL60500.068.17 |
| OMON | NL-OMON50096 |

# Study results