# Protein requirements in healthy adult men as assessed by the Indicator Amino Acid Oxidation (IAAO) technique: a replication study

No registrations found.

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

## Summary

### ID

NL-OMON26694

Source NTR

Brief title IAAO study

#### **Health condition**

- Protein requirements
- Protein metabolism

### **Sponsors and support**

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

### Intervention

### **Outcome measures**

#### **Primary outcome**

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The estimated average protein requirement (EAR) and the recommended daily allowance (RDA) of the studied population.

#### Secondary outcome

Carbon dioxide production, 13CO2 production, plasma and urine L-[1-13C]-phenylalanine enrichments, and plasma and urine phenylalanine concentration in a young, healthy, male population when applying the IAAO technique.

## **Study description**

### **Background summary**

Dietary protein is essential for stimulating tissue renewal and growth. Current dietary protein guidelines are based on nitrogen balance studies, but the complexity of this method limits its widespread application to assess dietary requirements. The minimally invasive Indicator Amino Acid Oxidation (IAAO) technique was recently introduced as a valid way to assess dietary protein requirements. The first human study that has applied the IAAO technique to assess protein requirements was performed in 8 healthy adult men in 2008. Protein requirements defined by the IAAO technique were comparable to those defined by the nitrogen balance method. To date, this is still the only data available on protein requirements in healthy adult men as assessed by the IAAO technique. Therefore, purpose of this study is to perform a replication study to assess protein requirements in healthy adult men as assessed by the IAAO technique.

#### **Study objective**

We hypothesize that this replication study will obtain a similar estimated average requirement (EAR) for dietary protein around 0.93 g·kg-1·d-1, as previously determined in Canadian healthy young adult men.

#### Study design

Breath, urine & blood sample before tracer ingestion and at t = 120, 150, 180, 210 & 240 min after start of tracer ingestion.

#### Intervention

7 different protein intake levels:

- 0.1 g/kg/d
- 0.3 g/kg/d
- 0.6 g/kg/d
- 0.9 g/kg/d

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- 1.2 g/kg/d - 1.5 g/kg/d - 1.8 g/kg/d

## Contacts

#### Public

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## **Eligibility criteria**

## **Inclusion criteria**

- Male

- Aged between 18-35 years

- Healthy, recreationally active (exercise at least 1 per two weeks and maximum 4 days a week)

-  $18.5 \le BMI \le 30 \text{ kg/m2}$ 

- No physical limitations (i.e. able to perform all activities associated with daily living in an independent manner).

## **Exclusion criteria**

- Smoking
- Musculoskeletal disorders
- Metabolic disorders
- Use of any medications known to affect protein metabolism (i.e. corticosteroids, nonsteroidal anti-inflammatories, or prescribed acne medications).
- Chronic use of gastric acid suppressing medication or anti-coagulants
- Unstable weight over the last three months
- Diagnosed GI tract disorders or diseases

## Study design

### Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	N/A , unknown

### Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	05-09-2021
Enrollment:	12
Туре:	Anticipated

### **IPD** sharing statement

Plan to share IPD: Undecided

## **Ethics review**

Positive opinionDate:27-08-2Application type:First su

### 27-08-2021 First submission

## **Study registrations**

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

ID: 50939 Bron: ToetsingOnline

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Titel:

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

No registrations found.

### In other registers

Register	ID
NTR-new	NL9693
ССМО	NL77716.068.21
OMON	NL-OMON50939

## **Study results**