Anabolic properties of BCKA and BCAA in vivo
in older men

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- We hypothesize that ingestion of BCAA will increase post-prandial plasma amino acid availability, thereby increasing myofibrillar muscle protein synthesis rates above basal values. - We hypothesize that ingestion of BCKA will increase post-...

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON28909

Bron
Nationaal Trial Register

Aandoening

Sarcopenia/Sarcopenie

Ondersteuning

Primaire sponsor: Maastricht University
Overige ondersteuning: Evonik Industries

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Primary study parameters include post-prandial plasma amino acid availability and myofibrillar muscle protein synthesis rates.

Toelichting onderzoek

Achtergrond van het onderzoek

Protein and/or essential amino acids are important for stimulating muscle protein synthesis (MPS) rates and inhibiting muscle protein breakdown. The anabolic properties to protein feeding can be increased by the co-ingestion of free leucine, thereby increasing the amount of dietary protein derived amino acids that are used for de novo muscle protein synthesis. Consequently branched chain amino acid (BCAA) supplementation or fortification can be used to increase MPS. However, supplementing with high amounts of protein and/or BCAA, necessary to stimulate MPS, can be harmful for patients suffering from for example Chronic Kidney Disease (CKD). Supplementation with branched chain keto acids (BCKA) may be of particular relevance in these conditions as these keto analogues do not provide nitrogen (N) and may help to reduce metabolic workload of liver and kidneys. However, it remains to be established whether BCAA and BCKA can be useful in stimulating MPS in vivo in humans.

Doel van het onderzoek

- We hypothesize that ingestion of BCAA will increase post-prandial plasma amino acid availability, thereby increasing myofibrillar muscle protein synthesis rates above basal values.

- We hypothesize that ingestion of BCKA will increase post-prandial plasma amino acid availability, thereby increasing myofibrillar muscle protein synthesis rates above basal values.

- We hypothesize that BCAA and BCKA is equally or less effective in increasing post-prandial plasma amino acid availability and myofibrillar muscle protein synthesis rates when compared to milk protein.

Onderzoeksopzet

Muscle biopsies will be taken at timepoints: 0h, 2h and 5h after ingestion of the beverage.

Onderzoeksproduct en/of interventie

A beverage (300 mL) containing 6 g of BCAA, 6 g of BCKA- or 30 g of milk protein will be consumed.

Contactpersonen

Publiek

Maastricht University, Dep. Human Biology

Cas Fuchs
Maastricht
The Netherlands
0433881381

Wetenschappelijk

Maastricht University, Dep. Human Biology

Cas Fuchs
Maastricht
The Netherlands
0433881381

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

• Healthy males

• Age between 65 and 80 y

• BMI between 18.5 and 30 kg/m2

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

• Lactose intolerance

• Smoking

• Diabetes

• Diagnosed GI tract 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 anticoagulants

• Participation in exercise program

• Hypertension, high blood pressure that is above 140/90 mmHg

• Females

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Dubbelblind
Controle:	Actieve controle groep

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	01-11-2016
Aantal proefpersonen:	45
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies

Datum:	20-09-2016
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL5875
NTR-old	NTR6047
Ander register	: METC 163035

Resultaten

Samenvatting resultaten
n/a