Measure protein metabolism via a breath test.

Gepubliceerd: 19-09-2016 Laatst bijgewerkt: 18-08-2022

Protein metabolism consists of amino acid incorporation and amino acid oxidation. We have developed a breath test which is able to measure the oxidation of ingested 13C-protein. We hypothesize that a diet low in protein before the breath test will...

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

Samenvatting

ID

NL-OMON25304

Bron
NTR

Verkorte titel
POS

Aandoening

If the protein oxidation breath test has discriminative powers, the breath test could be applied as a screening tool in people who are of risk at having malnutrition. Currently, the breath test will be tested on healthy volunteers.

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Total 13C-protein oxidation measured by the breath test over 5,5 hours.

Toelichting onderzoek

Achtergrond van het onderzoek

Researching protein oxidation in a non-invasive way could be an interesting approach to perform more research on protein metabolism. Our 30 gram 13C-protein breath test enables us to measure protein oxidation over 5,5 hours. With the knowledge that protein metabolism consists mainly of primarily incorporation of amino acids and secondarily oxidation of surplus amino acids we can make statements about total protein metabolism. In this trial, we will measure the effects of subjects' habitual diets (rich in protein, average 1.15 g protein/kg bw/day) versus a 4-day low protein diet (0.25 g protein/kg bw/day) on the protein oxidation measured bythe breath test performed on the fifth day. We expect to measure less of the 30 g protein being oxidized after a 4-day low protein diet compared to their habitual diet, similar to results aquired during our pilot experiment.

Doel van het onderzoek

Protein metabolism consists of amino acid incorporation and amino acid oxidation. We have developed a breath test which is able to measure the oxidation of ingested 13C-protein. We hypothesize that a diet low in protein before the breath test will result in a shortage of protein the body. During the test we expect to measure less 13C-protein to be oxidized compared to a normal protein diet.

Onderzoeksopzet

Baseline breath sample at t = -5 minutes
30 g 13C-protein in 500 ml water consumption at t = 0 (09:15)
Breath samples every ten minutes starting at 09:25 untill 14:45

Onderzoeksproduct en/of interventie

4 days of high protein diet (1,35 g protein / kg bodyweight /day) at habitual energy intake followed on day 5 by the protein oxidation breath test.

4 days of medium protein diet (0,8 g protein / kg bodyweight /day) at habitual energy intake followed on day 5 by the protein oxidation breath test.

4 days of low protein diet (0,25 g protein / kg bodyweight /day) at habitual energy intake followed on day 5 by the protein oxidation breath test.

Contactpersonen

Publiek

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Healthy volunteers:

Male

Age between 18 - 30

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- Disease and/or being medically treated (e.g. diabetes mellitus)

- Milk (protein) allergy or intolerance

- Smoking

- Drug use

- Alcoholism, and no alcohol during the 4-day diets

- Waist circumference ≥102 cm

- Vegetarian

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-09-2016
Aantal proefpersonen:	16
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	19-09-2016
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	NL5921
NTR-old	NTR6101
Ander register	METc commissie UMCG : METc 2016.144

Resultaten