Effects of low-fat vs high-fat diet on lipid accumulation in liver and skeletal muscle in overweight men.

Gepubliceerd: 10-12-2009 Laatst bijgewerkt: 13-12-2022

A high fat-diet can influence IMCL and IHL in rodents and in humans, the time-course of peripheral lipid accumulation in liver and skeletal muscle while switching from a low-fat to a high-fat diet is unknown.

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

Samenvatting

ID

NL-OMON19938

Bron
NTR

Verkorte titel
High-fat vs Low-fat diet

Aandoening

Type 2 diabetes (T2DM), Insulin resistance, Non-Alcoholic Fatty Liver Disease (NAFLD)

Type 2 diabetes, insuline resisstentie en leververvetting

Ondersteuning

Primaire sponsor: School for Nutrition, Toxicology and Metabolism of Maastricht University Medical centre + (MUMC+)
Overige ondersteuning: TI Food & Nutrition

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Main study parameter is the difference in lipid accumulation and insulin sensitivity after a switch from a low-fat diet to a high-fat diet compared to the control group, which stays on a low-fat diet.

Toelichting onderzoek

Achtergrond van het onderzoek

N/A

Doel van het onderzoek

A high fat-diet can influence IMCL and IHL in rodents and in humans, the time-course of peripheral lipid accumulation in liver and skeletal muscle while switching from a low-fat to a high-fat diet is unknown.

Onderzoeksopzet

T=1, T=21 and T=42 (days).

And additional liver lipid accumulation measurement in HF-group on t=28.

Onderzoeksproduct en/of interventie

Both groups, the control group and the experimental group, will start with 3 weeks on a low-fat diet which will deliver 15 Energy% of energy as protein, 65 En% as CHO and 20 En% as fat. After these 3weeks the experimental group will switch to a high-fat diet (15 En% protein, 30 En% CHO and 55% En% fat). wheras the control group stays on the low-fat diet.

Contactpersonen

Publiek

Postbus 616
Department of Human Biology
Maastricht University Medical Center

Patrick Schrauwen
Department of Human Biology
Maastricht University Medical Center
Maastricht 6200 MD
The Netherlands
+31(0)43-388 15 02

Wetenschappelijk

Postbus 616
Department of Human Biology
Maastricht University Medical Center
Patrick Schrauwen
Department of Human Biology
Maastricht University Medical Center
Maastricht 6200 MD
The Netherlands
+31(0)43-388 15 02

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Male sex;

2. Age 40-65 years;

3. BMI 25-35 kg/m2;

4. Sedentary;

5. Stable dietary habits;

6. Healthy.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Current use of medication that is known to interfere with the results of the study;

2. Consuming more than 20 g of alcohol per day (± 2 units);

3. Serum-γ-glutamyltranspeptidase level > 70 IU/L;

4. A history of cardiovascular disease like congestive heart failure or acute myocardial infarction;

5. Plasma triacylglycerol > 4.5 mmol/L;

6. Familial hypercholesterolemia;

7. A history of liver disease;

8. Unstable body weight (weight gain or loss > 3 kg in the past three months);

9. Abuse of drugs;

10. Participation in another biomedical study within 1 month prior to the screening visit;

11. Impossible or difficult venipuncture during screening;

12. A fasting glucose above 7.0 mmol/L (13);

13. A contraindication to MRI scanning. These contraindications include patients with the following devices:

a. Central nervous system aneurysm clips;

b. Implanted neural stimulator;

c. Implanted cardiac pacemaker or defibrillator;

d. Cochlear implant;

e. Ocular foreign body (e.g. metal shavings);

f. Insulin pump;

g. Metal shrapnel or bullet;

h. Or metal containing corpora aliena in the eye of brains.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	Geneesmiddel

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	01-07-2007
Aantal proefpersonen:	20
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies

Datum:	10-12-2009
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	NL2019

Register	ID
NTR-old	NTR2136
Ander register	MEC : 07-3-028
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten
N/A