Influence of different lipid emulsions on glucose uptake and mitochondrial function in healthy adults

No registrations found.

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

Summary

ID

NL-OMON21580

Source NTR

Brief title IV Lipid study

Health condition

Diabetes, Insulin resitance and mitochondrial dysfunction

Sponsors and support

Primary sponsor: Department of Endocrinology and Metabolism, Academic Medical Center Amsterdam, the Netherlands.

Source(s) of monetary or material Support: fund = initiator = sponsor

Intervention

Outcome measures

Primary outcome

- Peripheral glucose uptake (Rd)

1 - Influence of different lipid emulsions on glucose uptake and mitochondrial funct ... 4-05-2025

- Resting, adp-stimulated and uncoupled mitochondrial respiration rates

Secondary outcome

-Skeletal muscle metabolites of plasma FFA, i.e. glycosphingolipids

- Plasma concentrations of adiponectin, insulin, cortisol, glucagon, catecholamines

Study description

Background summary

Recently, disturbed mitochondrial function was shown to be associated with free fatty acid (FFA)- and obesity induced insulin resistance. Different types of FFA can have differential effects on glucose metabolism. Therefore we evaluate the effects of elevated plasma monounsaturated vs. polyunsaturated fatty acids on glucose metabolism and mitochondrial function.

Study objective

We hypothesized that FFA loading could impair mitochondrial function and that the potency of FFA to disturb mitochondrial function and glucose uptake would depend on the degree of desaturation of the fatty acids infused.

Study design

Participants were studied in balanced assignment on three different occasions (each two weeks apart) during a 6 hours infusion of Intralipid @, Clinoleic@, or saline 0.9% intravenously

Intervention

Infusion with with to different lipid emulsion respectivily Intralipid $\ensuremath{\$}$ and Clinoleic $\ensuremath{\$}$, versus Saline. Each patient is his own control.

Contacts

Public

Academic Medical Center (AMC)

F5-162 Endocrinology and Metabolism</br>

M. Brands Meibergdreef 9

Amsterdam 1100 DD The Netherlands +31 (0)20 5662663 **Scientific** Academic Medical Center (AMC)
 F5-162 Endocrinology and Metabolism

M. Brands Meibergdreef 9

Amsterdam 1100 DD The Netherlands +31 (0)20 5662663

Eligibility criteria

Inclusion criteria

- 1. Healthy male volunteer
- 2. Caucasian
- 3. Age between 18-35 years
- 4. Normal BMI (20-24.9 kg/m2)
- 5. VO2 max (90-110% predicted value according to Jones formula)
- 6. Stable weight during 3 months before participation and during participation
- 7. Normal physical activity with at least 2 times per week sport activities
- 8. Non-smoking

Exclusion criteria

1. Fasting blood glucose > 5,6 mmol/L or abnormal OGTT (2-hour value after oral ingestion of 75 g, glucose >7.8 mmol/l) Fasting insulin concentration >50 pmol/l

- 2. BMI> 25 and BMI< 20
- 3. DM type II in first degree relatives
- 4. All chronic diseases
- 5. Drug use
- 6. Dyslipidaemia
- 7. Abnormal liver or renal function

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Non-randomized controlled trial
Masking:	Single blinded (masking used)
Control:	Active

Recruitment

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	05-12-2005
Enrollment:	10
Туре:	Actual

Ethics review

Positive opinion	
Date:	21
Application type:	Fir

21-10-2008 First submission

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

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

No registrations found.

In other registers

Register	ID
NTR-new	NL1439
NTR-old	NTR1500
Other	: MEC 05/295
ISRCTN	ISRCTN wordt niet meer aangevraagd

Study results

Summary results N/A