# Lipid-induced mitochondrial dysfunction in type 2 diabetes.

No registrations found.

| | |
|---|---|
| **Ethical review** | Positive opinion |
| **Status** | Suspended |
| **Health condition type** | - |
| **Study type** | Observational non invasive |

## Summary

### ID

NL-OMON20007

**Source**
Nationaal Trial Register

**Health condition**

Type 2 diabetes, first-degree relatives of type 2 diabetic patients, insulin resistance, mitochondrial function

### Sponsors and support

**Primary sponsor:** Maastricht University Medical Centre, Maastricht, The Netherlands.
**Source(s) of monetary or material Support:** Diabetes foundation (DFN), The Netherlands

### Intervention

### Outcome measures

**Primary outcome**

1. Ex vivo mitochondrial function;

2. In vivo mitochondrial function;

3. Insulin sensitivity;

4. Fat accumulation in muscle and heart;

5. Indirect calorimetry.

### Secondary outcome

1. Plasma glucose;

2. Plasma insulin;

3. Plasma free fatty acids;

## Study description

### Background summary

We found a reduced basal ADP-stimulated and maximal mitohondrial respiratory capacity related to type 2 diabetes, which underlies the reduction in in vivo mitochondrial function, independent of mitochondrial content.

### Study objective

Does lipid accumulation in skeletal muscle and the heart effect mitochondrial function in relation to insulin resistance?

### Study design

1. All metabolic measurements for one patient planned within one month.
2. All subjects underwent these metabolic measurements within 1.5 year.

### Intervention

No intervention is performed.

## Contacts

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# Eligibility criteria

## Inclusion criteria

1. Well controlled type 2 diabetic patients;

2. Normoglycemic first-degree relatives with at least one first-line family member diagnosed with type 2 diabetes;

3. Normoglycemic control subjects;

4. BMI 27 - 30 kg/m2;

5. Age 50- 70 y.

## Exclusion criteria

1. Uncontrolled hypertension;

2. Active cardiovascular disease;

3. Liver disfunction;

4. Medication known to interfere with glucose metabolism (except for diabetic patients).

# Study design

## Design

| | |
|---|---|
| Study type: | Observational non invasive |
| Intervention model: | Parallel |
| Allocation: | Non controlled trial |
| Masking: | Open (masking not used) |
| Control: | N/A , unknown |

## Recruitment

NL

| | |
|---|---|
| Recruitment status: | Suspended |
| Start date (anticipated): | 02-01-2005 |
| Enrollment: | 60 |
| Type: | Anticipated |

# Ethics review

Positive opinion

| | |
|---|---|
| Date: | 22-10-2009 |
| Application type: | 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 | NL1956 |
| NTR-old | NTR2074 |
| Other | METC Maastricht University Medical Center : 04-257 |
| ISRCTN | ISRCTN wordt niet meer aangevraagd. |

# Study results

**Summary results**
Lower intrinsic ADP-stimulated mitochondrial respiration underlies in vivo mitochondrial dysfunction in muscle of male type 2 diabetic patients.
<br>
Diabetes, VOL 57, November 2008.