# X chromosome inactivation in human embryos obtained after either IVF or IVF/ICSI

No registrations found.

| | |
|---|---|
| **Ethical review** | Positive opinion |
| **Status** | Recruiting |
| **Health condition type** | - |
| **Study type** | Interventional |

## Summary

### ID

NL-OMON25839

**Source**
Nationaal Trial Register

**Brief title**
N/A

**Health condition**

IVF, ICSI, X chromosome inactivation, X chromosoom inactivatie

### Sponsors and support

**Primary sponsor:** Academic hospital Maastricht, the Netherlands
**Source(s) of monetary or material Support:** self-financing research

### Intervention

### Outcome measures

**Primary outcome**

X chromosome inactivation pattern in human surplus embryos

**Secondary outcome**

Comparison of time pattern of X chromosome inactivation between IVF and ICSI embryos

# Study description

### Background summary

There is concern that in-vitro culture of embryos and/or the ICSI technique might have an adverse effect on embryonic development via epigenetic alterations. In a previous study from our group using blastocysts resulting from surplus embryos obtained after either standard IVF or IVF/ICSI we found a clear sex related growth difference in human blastocysts originating from IVF/ICSI, but not in blastocysts originating from standard IVF. It is as yet unknown which mechanism is responsible for our findings. In in vitro produced female bovine blastocysts it has been shown that both X chromosomes were active while dosage compensation by X-chromosome inactivation did occur in in vivo generated embryos. Therefore, we hypothesize 1) that the process of X-inactivation has a time pattern in human preimplantation embryos comparable with that of the already investigated animal species, and 2) that the ICSI procedure might interfere with the process of X-inactivation in human embryos.

### Study objective

The ICSI procedure interferes with the process of X chromosome inactivation in human embryos

### Study design

Human surplus embryos at several stages of development (ranging between 8-cell and blastocyst stage) will be collected and analysed for the X chromosome inactivation status.

### Intervention

The intervention on the embryos is intracytoplasmic sperm injection (ICSI), which is compared with conventional IVF. ICSI is a regular intervention used in case of male subfertility, where one spermatozoon is injected into an oocyte, while in IVF the spermatozoa and the oocyte are brought together within a culture dish.

# Contacts

**Public**
Maastricht University Medical Center
Dept. of Obstetrics and Gynaecology
Postbus 5800

A. Montfoort, van
P. Debyelaan 25
Maastricht 6202 AZ
The Netherlands
+ 31 43 3872012
**Scientific**
Maastricht University Medical Center
Dept. of Obstetrics and Gynaecology
Postbus 5800
A. Montfoort, van
P. Debyelaan 25
Maastricht 6202 AZ
The Netherlands
+ 31 43 3872012

# Eligibility criteria

## Inclusion criteria

1. Human surplus embryos, not suitable for transfer or cryopreservation, originating from an IVF or ICSI treatment

2. Informed consent from patients

## Exclusion criteria

1. Abnormal fertilized embryos

2. Presence of multinucleated blastomeres

# Study design

## Design

| | |
|---|---|
| Study type: | Interventional |
| Intervention model: | Other |

**Control:** N/A , unknown

### Recruitment

NL

| | |
|---|---|
| Recruitment status: | Recruiting |
| Start date (anticipated): | 01-05-2008 |
| Enrollment: | 420 |
| Type: | Anticipated |

## Ethics review

Positive opinion

| | |
|---|---|
| Date: | 25-04-2008 |
| 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 | NL1253 |
| NTR-old | NTR1299 |
| Other | CCMO : P05.1655C |
| ISRCTN | ISRCTN wordt niet meer aangevraagd. |

## Study results

**Summary results**

N/A