The Dutch famine birth cohort study: Cognitive and brain aging

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(1) Study consequences of prenatal undernutrition for cognitive function and brain parameters in older age; (2) Study consequences of prenatal undernutrition for age-related changes in cognitive function and brain parameters; (3) Study DNA...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Observational invasive

Summary

ID

NL-OMON48102

Source
ToetsingOnline

Brief title
DFBC: cognitive and brain aging

Condition

- Other condition

Synonym
cognitive aging; brain aging

Health condition

cognitieve en hersenveroudering; neurodegeneratieve aandoeningen

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum
Source(s) of monetary or material Support: NWO,EU

Intervention

Keyword: brain, cognitive function, fetal programming, prenatal undernutrition

Outcome measures

Primary outcome

In a subsample of 200 cohort members, we will measure cognitive function by

applying neuropsychological testing, brain parameters by means of a

neuroimaging protocol.

Secondary outcome

Secondary study parameters are DNA methylation differences .

Study description

Background summary

In studying determinants of cognitive aging and neurodegenerative diseases such as dementia, research focus has mostly been on genetic background and lifestyle factors in adulthood. During the past two decades though, it has become increasingly clear that the foundations for brain functioning in later life are laid down in utero and adverse conditions during the prenatal period may increase the risk for the development of premature cognitive decline and neurodegenerative diseases. The Dutch famine birth cohort study provides the unique opportunity to investigate whether conditions in utero may indeed relate to accelerated cognitive decline and brain aging.

We hypothesize that exposure to undernutrition during gestation is associated with increased symptoms of cognitive and brain aging and that differences in cognitive and brain aging between individuals prenatally exposed and unexposed to undernutrition are associated with differences in DNA methylation levels.

Study objective

(1) Study consequences of prenatal undernutrition for cognitive function and brain parameters in older age;
(2) Study consequences of prenatal undernutrition for age-related changes in cognitive function and brain parameters;
(3) Study DNA methylation in relation to prenatal famine exposure and cognitive and brain aging.

Study design

Cohort study

Study burden and risks

Participants will be invited for a visit to the clinic for measurements. Measurements will include: blood withdrawal (20 ml), blood pressure, anthropometry (height, weight, waist, hip and head circumference), MRI of the brain, and a cognitive test battery. Furthermore, a standardized interview will be administered asking about lifestyle, medical history, medication use and mood symptoms. The estimated total time that measurements will take is about 3 hours. Physical burden will be minimal with blood withdrawal and MRI as the most discomforting measurements.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

The Dutch famine birth cohort consists of around 2400 people who were born around the time of the Dutch famine. For the present study we will randomly select a subsample of 40 participants per study group (born before famine, exposed to famine during early, mid or late gestation and conceived after famine), in total 200 participants, starting with those who also particpated in a study we performed in 2012. Those wo are still alive, living in the Netherlands with known contact information are eligible for participation.

Exclusion criteria

Cohort members who are unable to visit the clinica due to mental or physical illness.

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	05-06-2019
Enrollment:	200
Type:	Actual

Ethics review

Approved WMO Date:	29-03-2019
Application type:	First submission
Review commission:	METC Amsterdam UMC

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
CCMO	NL67970.018.19