100-plus Study

Published: 13-04-2017
Last updated: 28-04-2025

The aim of the 100-plus Study is to identify moleculair and environmental constellations that maintain cognitive healthduring extreme aging.

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

Summary

ID

NL-OMON50608

Source
ToetsingOnline

Brief title
100-plus

Condition

- Other condition

Synonym
extreme aging with cognitive health, healthy aging

Health condition

dementie

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: Alzheimer Nederland;private funding

Intervention

Keyword: Dementia, Genetics, Healthy aging, Protective factors

Outcome measures

Primary outcome

Factors that contribute to the maintenance of cognitive health by analyzing genetics, molecular characteristics such as biomarkers, proteomic markers, blood biomarkers, immunological markers, epigenetic markers and transcriptomic markers and brain tissues.

Secondary outcome

-Cognitive functioning (memory, attention, executive functions, visuospatial functioning and construction)

-Daily functioning and well-being (activities of daily living, sleep quality, depressive symptoms)

-Current lifestyle and lifestyle characteristics during life (interview)

-Physical strength (chair stand, grip strength)

-Physical health and medical history (interview, blood pressure, medication intake and medical dossier)

Study description

Background summary

About one third of people aged older than 85 suffer from the symptoms associated with dementia. A large majority of these patients suffer from Alzheimer*s Disease (AD) specifically, the most common dementia subtype. Dementia

prevalence increases with age. However, some people reach ages well over 100 years enjoying great mental health.
This raises several questions: how can human neurons remain functionally competent for more than 100 years? Do
neurons from these super-agers possess unique mechanisms for the repair of DNA damage, protein damage and
protection against the toxic effects of AD pathology? How is the immune system involved? The answers to these
questions are likely to provide new insights and directions for treating neurodegenerative diseases. The combination of extreme old age with maintained cognitive health is often observed in families, suggesting that
hereditary factors are involved in the protection against dementia. However, it can be expected that *maintained
cognitive health during extreme aging* reflects the integrated outcome of several underlying biochemical pathways.
Although these might be partly driven by a constellation of genetic variants, our aim is to thoroughly phenotype a
comprehensive set of characteristics associated with maintained cognitive health.

Study objective

The aim of the 100-plus Study is to identify moleculair and environmental constellations that maintain cognitive health
during extreme aging.

Study design

The 100-plus Study is a prospective longitudinal descriptive cohort study which aims to collect and investigate the
genomes in combination with matching brain tissues, neuropsychological assessments and further biological sampling
in cognitively healthy centenarians.
We will collect among other things , (i) data on medical and socio-economic history, lifestyle and genealogy; (ii) we
measure grip strength and blood pressure; (iii) cognitive functioning is measured with neuropsychological testing; (iv)
blood is collected for biomarker analyses and genotyping with NGS; (v) if participants are willing, they can participate in the 90+ study to evaluate Alzheimer-associated changes using in vivo brain imaging (vi) we inform participants or a CHC-sibling about the
possibility for post-mortem brain donation (vii) plan follow-up visits to evaluate changes in cognitive functioning and
general health.

Study burden and risks

There is no direct benefit for the participant. This study may lead to the discovery of genetic and molecular
characteristics that are responsible for the protection against AD and will learn us more about the processes that
maintain cognitive health during ageing. Ultimately, this might provide new directions for AD research and druggable
targets to intervene in neurodegenerative processes. This will be a benefit for future patients with AD.
For the largest part of the study, risks associated with participation are negligible.
Blood collection is done with venipuncture, with associated risks.
Neuropsychological testing may induce fatigue.
Participants will be informed that they are free to withdraw at any time during the study should they experience
excessive anxiety or malaise.

Contacts

Public
Vrije Universiteit Medisch Centrum

De Boelelaan 1118
Amsterdam 1081 HZ
NL
Scientific
Vrije Universiteit Medisch Centrum

De Boelelaan 1118
Amsterdam 1081 HZ
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

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

Inclusion criteria

CHCs:
• Age: >= 100 years
• self-report to be cognitively healthy, which is confirmed by their family members and/or caregivers
• consent to donation of a blood sample
• consent to undergo an interview and/or neuropsychological test battery ,
CHC-siblings and CHC-children and their partners:
• sibling or child of a CHC who participates in the 100-plus Study, or a partner thereof
• consent to donation of a blood sample
• consent to fill in a questionnaire
• CHC-siblings and partners only: consent to Mini-Mental state examination (MMSE)

Exclusion criteria

Legally incapable

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:	Recruiting
Start date (anticipated):	20-09-2017

Enrollment:	2000
Type:	Actual

Ethics review

Approved WMO Date:	13-04-2017
Application type:	First submission
Review commission:	METC Amsterdam UMC
Approved WMO Date:	24-11-2017
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	29-10-2018
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	18-09-2020
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	09-04-2025
Application type:	Amendment
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	NL57750.029.17