Origins of Alzheimer's disease across the life-course

Fact Sheet

Project Information

ORACLE

Grant agreement ID: 678543

Project website

DOI
10.3030/678543

Project closed

EC signature date
7 June 2016

Start date
1 September 2016

End date
28 February 2022

Funded under
EXCELLENT SCIENCE - European Research Council (ERC)

Total cost
€ 1 495 715,00

EU contribution
€ 1 495 715,00

Coordinated by
ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM
Netherlands

Objective

The origins of Alzheimer’s disease (AD) remain elusive. The long pre-clinical phase of AD is universally recognized, but it is not known when predisposition for AD develops nor when the first signs and symptoms become discernable. In this regard, an essential role is played by the ‘reserve’ capacity of the brain, which is built up in early life and acts as buffer against adverse risk factors later in life. However, life-time trajectories of build up and loss of reserve and its determinants remain poorly understood.
In ORACLE, I aim to unravel the origins of AD by studying reserve across the entire life-span: from in utero to end of life. The underlying hypothesis is that etiologic

factors exert their effect on the risk of AD during the entire life-span, through build-up and loss of reserve. Such life-course approach to study reserve is worldwide unique and constitutes truly ground-breaking research aimed at unraveling the earliest origins of AD. Key objectives are:
1) To study trajectories of reserve across the entire lifespan.
2) To study factors that shape reserve in early life.
3) To study factors that determine onset and early loss of reserve.
I will compile a life-course cohort that consists of three population-based samples totalling 40,829 persons that together cover the entire life-span: children in Generation R Study (in utero – 18 yrs); parents in Generation R Study (18–45 yrs); and the Rotterdam Study (45 yrs – death). Reserve will be quantified structurally using imaging techniques that measure volumetry, perfusion and connectivity as well as functionally by measuring cognitive and non-cognitive brain functions. I will study genetic and non-genetic risk factors of AD and their effects on reserve.
Results from ORACLE will provide ground-breaking new insights into the earliest origins of AD. In turn, these insights are of major importance to enable the early identification of persons at highest risk of AD and develop targeted prevention for these persons.

Fields of science (EuroSciVoc)

medical and health sciences > basic medicine > neurology > dementia > **alzheimer**

Programme(s)

H2020-EU.1.1. - EXCELLENT SCIENCE - European Research Council (ERC) MAIN PROGRAMME

Topic(s)

ERC-StG-2015 - ERC Starting Grant

Call for proposal

ERC-2015-STG

See other projects for this call

Funding Scheme

ERC-STG - Starting Grant

Host institution

ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM

Net EU contribution

€ 1 495 715,00

Total cost

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Address

DR MOLEWATERPLEIN 40
3015 GD Rotterdam
Netherlands

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Beneficiaries (1)

ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM

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