Longitudinal Analyses of Blood Pressure and Risk of Alzheimer´s disease and Vascular Dementia in 2.6 million people over 2 decades (BP and Dementia)

First published: 28/04/2018

Last updated: 15/03/2024

Study Planned

Administrative details

EU PAS number

EUPAS23753

Study ID

23963

DARWIN EU® study

No

Study countries

Spain

United Kingdom

Study description

Establishing modifiable risk factors of dementia risk is a global priority. The relationship of blood pressure to the risk of developing dementia is unclear. Previous research based on small studies suggests that people who have raised blood pressure in midlife may have a higher chance of developing dementia some 20 years later than people with lower blood pressure. The proposed study will use information from a large number of people in the UK to investigate the relationship between blood pressure and the future risk of developing dementia. People aged 40 years or older with a blood pressure reading between 1992 and 2009 will be selected from the CPRD primary care database. Their recorded development of dementia will be investigated, whilst accounting for differences in characteristics (e.g. age, gender, etc.). This study will provide information from a very large number of people with a sizeable amount of follow-up data which will be representative of the UK population. The findings will therefore provide important information to help clarify the relationship between blood pressure and dementia. The findings will help to inform preventative strategies for dementia.

Study status

Planned

Research institutions and networks

Institutions

OXON Epidemiology

Spain

United Kingdom

First published: 06/12/2010

Last updated: 03/06/2026

Institution | Laboratory/Research/Testing facility | Non-Pharmaceutical company | ENCePP partner

Electronic Health Records (EHR) Research Group, London School of Hygiene & Tropical Medicine (LSHTM)

United Kingdom

First published: 19/04/2010

Last updated: 04/11/2026

Institution | Educational Institution | ENCePP partner

OXON Epidemiology

Spain

United Kingdom

First published: 06/12/2010

Last updated: 03/06/2026

Institution | Laboratory/Research/Testing facility | Non-Pharmaceutical company | ENCePP partner

Contact details

Study institution contact

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Primary lead investigator

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Primary lead investigator

Study timelines

Date when funding contract was signed

Planned: 20/07/2016

Actual: 20/07/2016

Study start date

Planned: 13/09/2017

Date of final study report

Planned: 19/07/2018

Sources of funding

- Non-for-profit organisation (e.g. charity)

More details on funding

Alzheimer´s Society

Regulatory

Was the study required by a regulatory body?

No

Is the study required by a Risk Management Plan (RMP)?

Not applicable

Methodological aspects

Study type

Study type list

Study type:

Non-interventional study

Scope of the study:

Assessment of risk minimisation measure implementation or effectiveness

Disease epidemiology

Main study objective:

The primary objectives of the analysis is to estimate the age-specific association between systolic blood pressure (SBP) and diastolic blood pressure (DBP) and future risk of Alzheimer´disease, vascular dementia and all dementia

Study Design

Non-interventional study design

Cohort

Study drug and medical condition

Medical condition to be studied

Hypertension

Blood pressure decreased

Dementia Alzheimer's type

Vascular dementia

Population studied

Age groups

- Adults (46 to < 65 years)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

Estimated number of subjects

2.600.000

Study design details

Outcomes

Alzheimer´s disease,Vascular dementia,All dementia, Stroke,All-cause death

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Data analysis plan

To relate blood pressure (BP) to risk of dementia, Poisson regression models will be used to estimate incidence rates and rate ratios. Adjustment for age (in 5-year bands), sex, and baseline date (at index). To update age at risk as people move through the age categories. Adjustment of rate ratios for additional baseline cardiovascular covariates. To fit separate Poisson regression models in each category for follow intervals and age-at-risk. Correction for regression dilution bias using serial BP measurements. To assess selective mortality bias, a simulation study to investigate the size of competing risk of mortality, with ´joint frailty´ models. To confirm well-established association of BP with stroke and all mortality

Documents

Study, other information

BP vas and AD__ICPE 2017_LSHTM & OXON.pdf (119.11 KB)

Data management

ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Data sources

Data source(s)

Clinical Practice Research Datalink

Data sources (types)

Electronic healthcare records (EHR)

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No