

# Longitudinal Analyses of Body Mass Index and Risk of Parkinson's Disease in 2 million people over 2 decades (BMI and Parkinson's disease)

**First published:** 04/04/2018

**Last updated:** 02/07/2024

Study

Ongoing

## Administrative details

### EU PAS number

EUPAS23454

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### Study ID

23455

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### DARWIN EU® study

No

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### Study countries

 Spain

 United Kingdom

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## Study description

Previous research suggests that people who are overweight or obese may have a higher risk of developing Parkinson's disease than people with normal weight, while other studies show no such association. The objective of this study is therefore to investigate the association between BMI and risk of Parkinson's disease. A cohort will be derived from CPRD of people aged 40 years or older with a first BMI recording between 1992 and 2007. People with a prior record of Parkinson's disease or dementia will be excluded. Incidence rates of Parkinson's disease will be calculated for each BMI category using Poisson regression, adjusting for differences in patient characteristics and allowing for competing risks with a novel approach. This study will provide information from a very large number of people (2 million) with a sizeable amount of follow-up data in a representative sample. The findings will therefore provide important information to help clarify the relationship between BMI and Parkinson's disease to inform preventative and therapeutic strategies for Parkinson's disease.

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## Study status

Ongoing

## Research institutions and networks

### Institutions

#### OXON Epidemiology



Spain



United Kingdom

**First published:** 06/12/2010

**Last updated:** 15/03/2024


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:** 30/10/2024


Institution

Educational Institution

ENCEPP partner

## OXON Epidemiology

 Spain

 United Kingdom

**First published:** 06/12/2010

**Last updated:** 15/03/2024

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

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**Study start date**

Planned: 20/07/2016

Actual: 20/07/2016

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**Data analysis start date**

Planned: 15/09/2016

Actual: 15/09/2016

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**Date of final study report**

Planned: 17/09/2018

## Sources of funding

- Other

## More details on funding

No funding

## Regulatory

### **Was the study required by a regulatory body?**

No

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

Not applicable

## Methodological aspects

### Study type

### Study type list

#### **Study type:**

Non-interventional study

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#### **Scope of the study:**

Assessment of risk minimisation measure implementation or effectiveness

Disease epidemiology

#### **Main study objective:**

The primary objective is to estimate the age-specific associations between BMI and Parkinson's disease. Secondary objectives are to assess the shape of the association and identify potential modifiers and confounders of the risk. The results will be usable for disease prediction models, patient management, the planning of trials, and help in hypotheses of pathophysiological mechanisms of PD

## Study Design

### **Non-interventional study design**

Cohort

## Study drug and medical condition

### **Medical condition to be studied**

Obesity

Parkinson's disease

## Population studied

### **Short description of the study population**

2 million patients followed up over 2 decades. Underweight (< 20 kg/m<sup>2</sup>): 106,716 people Healthy weight (20-24.9 kg/m<sup>2</sup>): 629,126 people Overweight (25-29.9 kg/m<sup>2</sup>): 727,339 people Obese ( $\geq$  30 kg/m<sup>2</sup>): 489,406 people With a median follow-up of 9.3 years, PD occurred in 11,616 people.

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### **Age groups**

- Adults (46 to < 65 years)
  - Adults (65 to < 75 years)
  - Adults (75 to < 85 years)
  - Adults (85 years and over)
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### **Estimated number of subjects**

2000000

## Study design details

### **Outcomes**

Parkinson's disease

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### **Data analysis plan**

We compared rates of PD across categories of BMI using Poisson regression models. Standardised incidence rates and rate ratios were either adjusted for age (in five-year bands) and sex, or further adjusted for the following covariates, measured at the time of index BMI. We used age at diagnosis, updating the data as people moved through the age categories during follow-up. Incidence rates were standardised to the age and sex distribution of the overall study population. We performed analyses to investigate whether the association between BMI and PD varied depending on the time from the index BMI measurement. We calculated the cumulative incidence of PD using the Kaplan-Meier estimator, with age as the underlying time scale. We performed a sensitivity analysis to investigate whether our findings could be reasonably explained by competing risks using a novel approach under a hypothetical scenario and using matching

## Documents

## Study, other information

[BMI and PD\\_poster ICPE\\_2016.pdf](#) (465.51 KB)

## Study publications

[Iwagami, M., Qizilbash, N., Gregson, J., Douglas, I., Johnson, M., Pearce, N., ...](#)

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## 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

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### Data sources (types)

[Electronic healthcare records \(EHR\)](#)

## Use of a Common Data Model (CDM)

### CDM mapping

No

## Data quality specifications

**Check conformance**

Unknown

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**Check completeness**

Unknown

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**Check stability**

Unknown

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**Check logical consistency**

Unknown

## Data characterisation

**Data characterisation conducted**

No