DARWIN EU® - Capturing obesity in DARWIN EU

First published: 10/11/2025

Last updated: 16/11/2026

Study Finalised

Administrative details

EU PAS number

EUPAS1000000820

Study ID

1000000820

DARWIN EU® study

Yes

Study countries

- Belgium
- Croatia
- Denmark
- Estonia
- Finland
- France

Germany
Greece
Hungary
Italy
Netherlands
Norway
Portugal
Spain
Sweden
United Kingdom

Study status

Finalised

Research institutions and networks

Institutions

Department of Medical Informatics - Health Data Science, Erasmus Medical Center (ErasmusMC)

Netherlands

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Last updated: 02/05/2024

Institution **Educational Institution** **ENCePP partner**

Networks

Data Analysis and Real World Interrogation Network (DARWIN EU®)

- Belgium
- Croatia
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Italy
- Lithuania
- Netherlands
- Norway
- Poland
- Portugal
- Spain
- Sweden
- United Kingdom
- United States

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Network

Contact details

Study institution contact

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Study contact

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Primary lead investigator

Nicholas Hunt

Primary lead investigator

Study timelines

Date when funding contract was signed

Planned: 27/05/2025

Actual: 27/05/2025

Study start date

Planned: 28/11/2025

Date of final study report

Planned: 29/05/2026

Actual: 28/10/2026

Study protocol

DARWIN EU_Protocol_P4-C3-004_P4-C2-008_P4-C2-009_P4-C2-010_Capturing obesity in DARWIN EU_V5.0.pdf (1.85 MB)

Regulatory

Was the study required by a regulatory body?

Yes

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

Not applicable

Methodological aspects

Study type

Study type list

Study topic:

Disease /health condition

Study type:

Non-interventional study

Scope of the study:

Disease epidemiology

Feasibility analysis

Data collection methods:

Secondary use of data

Study design:

retrospective cohort study

Main study objective:

1. To assess the proportion of individuals with obesity related conditions (i.e. obesity related disease codes), measurements (BMI, height, weight, waist circumference, cholesterol), observations (lifestyle factors: diet – physical activity) and procedures (bariatric surgery) within the Darwin EU network

2. To characterise reporting of BMI, weight, diet, physical activity within the Darwin EU network in terms of:
Median number (and IQR) of BMI, weight, waist circumference, diet and physical activity reporting per individual within the study period
To summarise the median (min-max, Q1 and Q3) of individual-level BMI and weight
To assess changes over time in the rate of BMI and weight measurements

3. To describe the characteristics of individuals with obesity based on disease codes vs obesity based on high BMI (BMI ≥30) in terms of demography, comorbidity (i.e. diabetes mellitus, hypertension, ischemic heart disease, renal failure etc), use of concomitant medications (e.g. GLP1 receptor agonists, orlistat, metformin, naltrexone+bupropion), procedures (i.e. bariatric surgery) and lifestyle factors (diet, physical activity, smoking)

Study Design

Non-interventional study design
Cohort

Study drug and medical condition

Medical condition to be studied
Obesity

Population studied

Short description of the study population

The study population will include all individuals present in the database during the study period 01/01/2010 (or start of available data) to 30/06/2025 (or to the end of available data) and with at least 365 days of database history prior to index date (except for individuals in hospital data sources).

Study design details

Outcomes

For prevalence estimation, outcomes will include condition records of obesity and measurements of BMI,
weight, height, cholesterol, and waist circumference.

Data analysis plan

The frequency and period prevalence of obesity and obesity-related measurements will be estimated in all individuals in the data sources, overall and stratified by sex and age categories. Characteristics will be described by means of median age, sex, and the covariates of interest, which will be reported as counts and proportions. The statistical analyses will be performed based on OMOP common data model mapped data using the IncidencePrevalence and CohortCharacterisation R packages. A minimum cell counts of 5 will be used when reporting results.

Summary results

CONCLUSION

Heterogeneity was observed in capturing information on obesity-related variables and measurements across data sources. Nationwide registries, outpatient general practitioner, and biobank data sources had a higher coverage of obesity-related variables and measurements than other data

source types. Repeated BMI and weight measurements were seen across a variety of data source types, including EBB, BIFAP, CPRD GOLD, FinOMOP-ACI Varha, H12O, IMASIS, IPCI, IQVIA LPD Belgium, and VID. Hospital data sources had a lower capture of obesity-related anthropometric measurements, such as BMI, weight, and height. Hospital data sources that had capture of these variables had a lower median time between sequential measurements, likely due to the observation time recorded in these data sources. Data from the measurement domain were often not prioritised for mapping to the CDM. In particular, values of measurements are not systematically mapped, which reduces the number of data sources which could contribute to a study using obesity as a variable. A systematic and consistent approach to mapping obesity related measurement values would provide a benefit to future studies which focus on obesity or studies making use of anthropometric measurements as a covariate. Based on the current assessment, primary
care data sources (BIFAP, CPRD GOLD, IPCI, SIDIAP, and VID), and one biobank data source (EBB) may be fit
for-purpose for obesity-related studies based on RWD.

Documents

Study report

DARWIN EU_Report_P4-C3-004_C2-008_009_010.pdf (9.33 MB)

Shiny App

Data management

Data sources

Data source(s)

AP-HM IATROS

BIFAP - Base de Datos para la Investigación Farmacoepidemiológica en el Ámbito Público (Pharmacoepidemiological Research Database for Public Health Systems)

Clinical Data Warehouse of the Bordeaux University Hospital

Clinical Practice Research Datalink (CPRD) GOLD

Danish Health Data Registries

Estonian Biobank

Auria Clinical Informatics (FinOMOP)

TaUH patient cohort (FinOMOP)

Hospital District of Helsinki and Uusimaa patient cohort (FinOMOP)

Data source(s), other

Hospital Universitario 12 de Octubre

Use of a Common Data Model (CDM)

CDM mapping

Yes

CDM Mappings

CDM name

OMOP

CDM website

https://www.ohdsi.org/Data-standardization/

CDM version

https://ohdsi.github.io/CommonDataModel/index.html

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No