# Safety of Paxlovid Among Patients with Moderate or Severe Hepatic or Renal Impairment

**First published:** 14/12/2022

**Last updated:** 19/08/2024

Study Ongoing

## Administrative details

**EU PAS number**

EUPAS50123

**Study ID**

50124

**DARWIN EU® study**

No

**Study countries**

France

Spain

United Kingdom

**Study description**

This study aims to answer the 2 research questions what is the comparative safety of liver, abdominal, anaphylactic reactions, and other outcomes, in patients with moderate or severe hepatic impairment exposed to Paxlovid and what is the comparative safety of abdominal, anaphylactic reactions, and other outcomes, in patients with moderate or severe renal impairment exposed to Paxlovid?

The primary objective is to assess the safety of Paxlovid relative to the comparator populations who used molnupiravir for COVID-19 and to unexposed patients with COVID-19 with respect to hospitalisations or emergency room visits for the following outcomes among individuals with moderate or severe renal impairment: severe vomiting, nausea, diarrhoea, or abdominal pain, dysgeusia, headache, or hypertension, anaphylactic reactions, and for the same outcomes in addition to hepatic transaminase elevations, clinical hepatitis, or jaundice among individuals with moderate or severe hepatic impairment. The study will focus on the target populations. Within each population, there will be a descriptive analysis and comparative analyses. Molnupiravir, an antiviral with a similar recommended usage, will be used as an active comparator in the data sources for which it is available, other drugs may be incorporated as active comparators as more information becomes available. A second comparator group is included in the study: individuals who were at increased risk for progression to severe COVID-19 but had not received Paxlovid or molnupiravir. This PASS will make secondary use of several data sources from electronic health records and/or claims data in European countries that have the ability to capture Paxlovid exposure and where the target populations, study outcomes, and key covariates can be ascertained.

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**Study status**

Ongoing

## Research institutions and networks

# Institutions

## Pfizer

**First published:** 01/02/2024

**Last updated:** 01/02/2024

Institution

## University Medical Center Utrecht (UMCU)

Netherlands

**First published:** 24/11/2021

**Last updated:** 22/02/2024

Institution | Educational Institution | Hospital/Clinic/Other health care facility | ENCePP partner

## RTI Health Solutions (RTI-HS)

France

Spain

Sweden

United Kingdom

United Kingdom (Northern Ireland)

United States

**First published:** 21/04/2010

**Last updated:** 13/03/2025

Institution | Not-for-profit | ENCePP partner

## Fundació Institut Universitari per a la Recerca a l'Atenció Primària de Salut Jordi Gol i Gurina, IDIAPJGol

Spain

**First published:** 05/10/2012

**Last updated:** 23/05/2025

Institution | Educational Institution | Laboratory/Research/Testing facility | Not-for-profit | ENCePP partner

## Bordeaux PharmacoEpi, University of Bordeaux

France

**First published:** 07/02/2023

**Last updated:** 08/12/2025

Institution | Educational Institution | Hospital/Clinic/Other health care facility | Not-for-profit | ENCePP partner

## Agenzia regionale di sanità della Toscana (ARS Toscana)

Italy

**First published:** 01/02/2024

**Last updated:** 23/03/2026

Institution | EU Institution/Body/Agency | ENCePP partner

# Networks

## The SIGMA Consortium (SIGMA)

Denmark
European Union
France
Germany
Italy
Netherlands
Norway
Spain
Sweden
United Kingdom

**First published:** 10/02/2013

**Last updated:** 19/01/2026

Network | ENCePP partner

# Contact details

**Study institution contact**

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Study contact

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**Primary lead investigator**

Muhammad Younus

Primary lead investigator

# Study timelines

**Date when funding contract was signed**

Planned: 18/03/2022

Actual: 18/03/2022

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**Study start date**

Planned: 01/03/2024

Actual: 01/03/2024

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**Date of final study report**

Planned: 31/03/2026

# Sources of funding

- Pharmaceutical company and other private sector

## More details on funding

Pfizer Inc

## Study protocol

C4671047_PROTOCOL_V1_16NOV2022.pdf (3.98 MB)

C4671047_PROTOCOL AMENDMENT 2_V3_21JUN2023_SIGNED.pdf (1.32 MB)

## Regulatory

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

Yes

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

EU RMP category 3 (required)

# Methodological aspects

## Study type

## Study type list

**Study type:**

Non-interventional study

**Scope of the study:**

Assessment of risk minimisation measure implementation or effectiveness
Safety study (incl. comparative)

**Main study objective:**
Assess the safety of Paxlovid among 1) individuals with moderate or severe hepatic impairment and 2) individuals with moderate or severe renal impairment; compared to users of molnupiravir or to unexposed.

## Study Design

**Non-interventional study design**
Cohort

## Study drug and medical condition

**Medicinal product name**
PAXLOVID

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**Study drug International non-proprietary name (INN) or common name**
NIRMATRELVIR
RITONAVIR

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**Anatomical Therapeutic Chemical (ATC) code**
(J05AE) Protease inhibitors
Protease inhibitors
(J05AE30) nirmatrelvir and ritonavir
nirmatrelvir and ritonavir

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**Medical condition to be studied**

Jaundice

Vomiting

Nausea

Diarrhoea

Abdominal pain

Dysgeusia

Headache

Anaphylactic reaction

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**Additional medical condition(s)**

Hepatic transaminase elevations, clinical hepatitis

# Population studied

**Age groups**

- Infants and toddlers (28 days – 23 months)
- Children (2 to < 12 years)
- Adolescents (12 to < 18 years)
- **Adult and elderly population (≥18 years)**
  - Adults (18 to < 65 years)
    - Adults (18 to < 46 years)
    - Adults (46 to < 65 years)
  - Elderly (≥ 65 years)
    - Adults (65 to < 75 years)
    - Adults (75 to < 85 years)
    - Adults (85 years and over)

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**Special population of interest**

Hepatic impaired

Renal impaired

## Study design details

**Outcomes**

Hepatic transaminase elevations, clinical hepatitis, or jaundice, severe vomiting, nausea, diarrhoea, or abdominal pain, dysgeusia, headache, or hypertension, anaphylactic reactions.

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**Data analysis plan**

The study will have a cohort design, the design is retrospective, and the data were collected prospectively. Focusing on the target populations, the descriptive component will include tabulations of age, sex, comorbidities, selected concurrent medications, COVID-19 vaccination status, history of COVID-19, current COVID-19 status and setting of Paxlovid use (among Paxlovid users). Comparative analyses will be based on the estimation of risk/prevalence, risk/prevalence ratios, and risk/prevalence differences. Comparative analyses will control for measured confounding within each data source. Aggregated results from each data source will be combined using meta-analytic techniques as numbers allow. If a study population is too small, analyses will be only descriptive, pooling of results from various data sources will be undertaken only if at least 3 independent data points are available.

## Documents

**Study, other information**

1047_DeclarationofInterests_combined.pdf (2.79 MB)

1047_DeclarationofInterests-Annex5_template _Muhammad Younus.pdf (104.35 KB)

## Data management

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)**

The Information System for Research in Primary Care (SIDIAP)

Système National des Données de Santé (French national health system main database)

Clinical Practice Research Datalink

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**Data sources (types)**

Administrative healthcare records (e.g., claims)

Disease registry

Drug dispensing/prescription data

Electronic healthcare records (EHR)

# Use of a Common Data Model (CDM)

**CDM mapping**

Yes

**CDM Mappings**

**CDM name**

ConcepTION CDM

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**CDM website**

https://www.imi-conception.eu/

**CDM release frequency**

6 months

## Data quality specifications

**Check conformance**

Unknown

**Check completeness**

Unknown

**Check stability**

Unknown

**Check logical consistency**

Unknown

## Data characterisation

**Data characterisation conducted**

No