

# The Risk of Venous Thrombotic Events among Males Treated with Testosterone Replacement Therapy (I5E-MC-B003)

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

**Last updated:** 26/04/2016

Study

Finalised

## Administrative details

### EU PAS number

EUPAS4894

---

### Study ID

13309

---

### DARWIN EU® study

No

---

### Study countries

United States

---

### Study description

**Primary Objective:** To evaluate the VTE risk using cohort study design by estimating the incidence rates (IRs), and hazard ratio (HR) of VTE among hypogonadal patients treated with testosterone replacement therapy (overall and by different routes of administration) relative to a propensity score matched untreated comparison group

**Secondary Objective:** To evaluate the VTE risk using a nested case-control study within original cohort by estimating the crude and adjusted odds ratio (OR) of VTE for patients exposed to testosterone products (overall and by different routes of administration) compared to untreated hypogonadal patients

**Study design:** A retrospective cohort study is proposed as a primary study design, with a nested case-control study as a secondary study design. The retrospective cohort observational study will use electronic claims records in the United States (US) to assess the crude and adjusted incidence rate of VTE among patients newly treated with any testosterone products relative to hypogonadal patients without testosterone treatment matched on baseline characteristics and calendar time. A nested case-control study will be performed within the original hypogonadal cohort.

---

### **Study status**

Finalised

## Research institutions and networks

### Institutions

**Eli Lilly and Company**

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

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

**Institution**

## Contact details

### Study institution contact

Hu Li LI\_HU\_HL@lilly.com

Study contact

[LI\\_HU\\_HL@lilly.com](mailto:LI_HU_HL@lilly.com)

### Primary lead investigator

Hu Li

Primary lead investigator

## Study timelines

### Date when funding contract was signed

Planned: 04/10/2013

Actual: 15/02/2013

---

### Study start date

Planned: 04/02/2014

Actual: 04/03/2014

---

### Data analysis start date

Planned: 01/04/2014

Actual: 29/05/2014

---

### Date of final study report

Planned: 30/09/2014

Actual: 23/10/2014

## Sources of funding

- Pharmaceutical company and other private sector

## More details on funding

Eli Lilly and Company

## Study protocol

[Axiron VTE study protocol\\_final Oc0413\\_submitted Enepp Feb 2014.pdf](#) (302.97 KB)

## Regulatory

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

No

## Methodological aspects

### Study type

### Study type list

**Study topic:**

Human medicinal product

Disease /health condition

---

**Study type:**

Non-interventional study

---

**Scope of the study:**

Safety study (incl. comparative)

**Data collection methods:**

Secondary use of data

---

**Main study objective:**

To evaluate the VTE risk using cohort study design by estimating the incidence rates (IRs), and hazard ratio (HR) of VTE among patients treated with testosterone replacement therapy (overall and by different routes of administration) relative to a propensity score matched untreated comparison group.

## Study Design

**Non-interventional study design**

Cohort

Case-control

## Study drug and medical condition

**Anatomical Therapeutic Chemical (ATC) code**

(G03BA03) testosterone

testosterone

---

**Medical condition to be studied**

Venous thrombosis

## Population studied

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

Male Hypogonadal patients aged 18 years or old with at least 12 months (365 days) of continuous enrollment in the health plan prior to the index date.

---

### **Age groups**

- Adults (18 to < 46 years)
  - Adults (46 to < 65 years)
  - Adults (65 to < 75 years)
  - Adults (75 to < 85 years)
  - Adults (85 years and over)
- 

### **Special population of interest**

Other

---

### **Special population of interest, other**

Hypogonadal patients

---

### **Estimated number of subjects**

3229

## **Study design details**

### **Outcomes**

According to the suggestion of FDA Mini-sentinel project, the following ICD-9 codes are used to define VTE : 415.x, 451.x, and 453.x. Three physicians will be adjudicating the claims of each case and determine if it is a idiopathic or non-idiopathic VTE case.

---

### **Data analysis plan**

Please provide a brief summary of the analysis method: The primary analysis of this protocol is to compare the percentage of patients who developed incident VTE after index date in treated patients who received at least 1 prescription of any testosterone products versus untreated patients who have not received any testosterone prescription. Propensity score matching method will be applied to select untreated cohort and match to treated cohort. Cox regression model will be used to estimate the incidence rate and hazard ratio. For the secondary (nested case-control) analysis, the conditional logistic regression is planned for univariate and multivariate analyses. The association between testosterone exposure patterns (current and past exposure of testosterone) will be reported as crude and adjusted OR representing the testosterone exposures relative to non-testosterone users.

## Documents

### Study publications

[Li H, Benoit K, Wang W, Motsko S. Association between use of exogenous testoste...](#)

---

## 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), other**

Marketscan THAM United States

---

**Data sources (types)**

[Administrative healthcare records \(e.g., claims\)](#)

## 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