Medicines & Healthcare products
Regulatory Agency

Public Assessment Report

National Procedure

Testosterone undecanoate 1000 mg/4mL, solution for injection

testosterone undecanoate

PL 51412/0005

Laboratorios Farmalán, S.A.

LAY SUMMARY

Testosterone undecanoate 1000 mg/4mL, solution for injection
testosterone undecanoate

This is a summary of the Public Assessment Report (PAR) for Testosterone undecanoate 1000 mg/4mL, solution for injection. It explains how this product was assessed and its authorisation recommended, as well as its conditions of use. It is not intended to provide practical advice on how to use this product.

This product will be referred to as Testosterone undecanoate in this lay summary for ease of reading.

This product has been authorised by Medicines and Healthcare products Regulatory Agency (MHRA) for the United Kingdom. This procedure takes into account the outcome of a decentralised (DC) procedure in European Union Member States (and/or Iceland, Liechtenstein, Norway) on 07 December 2022 (SE/H/2231/01/DC). This is known as the MR/DC Reliance Procedure.

This application was approved under Regulation 51B of the Human Medicines Regulation 2012, as amended (previously Article 10.1 of Directive 2001/83/EC, as amended).

For practical information about using Testosterone undecanoate, patients should read the Patient Information Leaflet (PIL) or contact their doctor or pharmacist.

What is Testosterone undecanoate and what is it used for?
This product is a generic medicine. This means that this medicine is the same as, and considered interchangeable with, a reference medicine already authorised, called Nebido 1000 mg / 4ml, solution for injection.

Testosterone undecanoate is used in adult men for testosterone replacement to treat various health problems caused by a lack of testosterone (male hypogonadism). These should be confirmed by two separate blood testosterone measurements and include clinical symptoms such as:

- Impotence
- Infertility
- low sex drive
- tiredness
- depressive moods
- bone loss caused by low hormone levels

How does Testosterone undecanoate work?
Testosterone undecanoate contains testosterone, a male hormone, as the active ingredient.

Testosterone undecanoate is injected into a muscle in the patient’s body, where it can be stored and gradually released over a period of time.

How is Testosterone undecanoate used?
The pharmaceutical form of this medicine is a solution for injection, and the route of administration is intramuscular (into a muscle) use.

The patient's doctor will inject Testosterone undecanoate (1 vial) very slowly into a muscle. The patient will be given the injections every 10 to 14 weeks. This is enough to maintain sufficient testosterone levels without leading to a build-up of testosterone in the blood.

Testosterone undecanoate is *strictly* for intramuscular injection. Special care will be taken to avoid injection into a blood vessel.

Start of treatment
The patient's doctor will measure their blood testosterone levels before starting treatment and during the early stages of treatment. Their doctor may give the patient the second injection after only six weeks in order to quickly reach the necessary testosterone level. This will depend on their symptoms and testosterone levels.

Maintaining the Testosterone undecanoate levels during treatment
The injection interval should always be within the recommended range of 10 to 14 weeks.

The doctor will measure the patient's testosterone levels regularly at the end of an injection interval to make sure it is at the right level. If the level is too low, their doctor may decide to give the injections more often. If their testosterone levels are high, their doctor may decide to give them injections less often.

The patient should *not* miss their injection appointments. Otherwise, their optimum level of testosterone will not be maintained.

If the patient thinks that the effect of Testosterone undecanoate is too strong or too weak, they should talk to their doctor.

For further information on how Testosterone undecanoate is used, refer to the PIL and Summary of Product Characteristics (SmPC) available on the Medicines and Healthcare products Regulatory Agency (MHRA) website.

This medicine can only be obtained with a prescription.

The patient should ask the administering healthcare practitioner if they have any questions concerning their medicine.

What benefits of Testosterone undecanoate have been shown in studies?
No additional studies were needed as Testosterone undecanoate contain the same active substance as the reference medicine, and satisfactory data to justify the differences have been provided.

What are the possible side effects of Testosterone undecanoate?
For the full list of all side effects reported with this medicine, see Section 4 of the PIL or the SmPC available on the MHRA website.

If a patient gets any side effects, they should talk to their doctor, pharmacist or nurse. This includes any possible side effects not listed in the product information or the PIL that comes with the medicine. Patients can also report suspected side effects themselves, or a report can be made on their behalf by someone else who cares for them, directly via the Yellow Card scheme at https://yellowcard.mhra.gov.uk or search for 'MHRA Yellow Card' online. By

reporting side effects, patients can help provide more information on the safety of this medicine.

The most common side effects with Testosterone undecanoate (which may affect up to 1 in 10 people) are abnormally high levels of red blood cells, weight gain, hot flushes, acne, enlarged prostate and associated problems, and various reactions where the injection was given (e.g. pain, bruising or irritation).

Why was Testosterone undecanoate approved?
It was concluded that, Testosterone undecanoate has been shown to be comparable to the reference medicine. Therefore, the MHRA decided that, as for the reference medicine, the benefits are greater than the risks and recommended that it can be approved for use.

Testosterone undecanoate has been authorised with the condition to provide additional measures to minimise the risk. See section below "What measures are being taken to ensure the safe and effective use of Testosterone undecanoate?"

What measures are being taken to ensure the safe and effective use of Testosterone undecanoate?
As for all newly-authorised medicines, an Risk Management Plan (RMP) has been developed for Testosterone undecanoate. The RMP details the important risks of Testosterone undecanoate, how these risks can be minimised, any uncertainties about Testosterone undecanoate (missing information), and how more information will be obtained about the important risks and uncertainties.

The following safety concerns have been recognised for Testosterone undecanoate:

Summary of safety concerns	
Important Identified Risk	• Pulmonary oil microembolism (POME)
Important Potential Risk	• Thromboembolic risk secondary to haematocrit increase
Missing information	• None

The Marketing Authorisation Holder has committed to additional risk minimisation measures which include provision of an educational brochure (administration guide) for the healthcare professionals.

The information included in the SmPC and the PIL is compiled based on the available quality, non-clinical and clinical data, and includes appropriate precautions to be followed by healthcare professionals and patients. Side effects of Testosterone undecanoate are continuously monitored and reviewed including all reports of suspected side-effects from patients, their carers, and healthcare professionals.

An RMP and a summary of the pharmacovigilance system have been provided with this application and are satisfactory.

Other information about Testosterone undecanoate

A marketing authorisation for Testosterone undecanoate was granted in the United Kingdom on 24 April 2024. Following approval, the MA underwent a change of ownership procedure on 07 June 2024 from the original marketing authorisation holder (MAH), Pharmaceutical Innovation Services S.L. (PL 58081/0001), to the current MAH, Laboratorios Farmalán, S.A. (PL 51412/0005).

The full PAR for Testosterone undecanoate follows this summary.

This summary was last updated in March 2025.

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I. INTRODUCTION

Based on the review of the data on quality, safety and efficacy, the Medicines and Healthcare products Regulatory Agency (MHRA) considered that the application for Testosterone undecanoate 1000 mg/4mL, solution for injection (PL 51412/0005) could be approved.

The product is approved for the following indication:
Testosterone replacement therapy for male hypogonadism, when testosterone deficiency has been confirmed by clinical features and biochemical tests.

The active substance, testosterone undecanoate is an ester of the naturally occurring androgen, testosterone. The active form, testosterone, is formed by cleavage of the side chain.

Testosterone is the most important androgen of the male, mainly synthesized in the testicles, and to a small extent in the adrenal cortex.

Testosterone is responsible for the expression of masculine characteristics during foetal, early childhood, and pubertal development and thereafter for maintaining the masculine phenotype and androgen-dependent functions (e.g. spermatogenesis, accessory sexual glands). It also performs functions, e.g. in the skin, muscles, skeleton, kidney, liver, bone marrow, and CNS.

Dependent on the target organ, the spectrum of activities of testosterone is mainly androgenic (e.g. prostate, seminal vesicles, epididymis) or protein-anabolic (muscle, bone, haematopoiesis, kidney, liver).

The effects of testosterone in some organs arise after peripheral conversion of testosterone to oestradiol, which then binds to estrogen receptors in the target cell nucleus e.g. the pituitary, fat, brain, bone, and testicular Leydig cells.

This product has been authorised by MHRA for the United Kingdom. This procedure takes into account the outcome of a decentralised (DC) procedure in European Union Member States (and/or Iceland, Liechtenstein, Norway) on 07 December 2022 (SE/H/2231/01/DC).

For the scientific discussion of the quality, non-clinical and clinical assessment conducted during the DC procedures, please refer to the Reference Member State (RMS) Public Assessment Report, available on the RMS regulatory agency website or on the Heads of Medicines Agencies website.

This application was approved under Regulation 51B of the Human Medicines Regulation 2012, as amended (previously Article 10.1 of Directive 2001/83/EC, as amended).

The MHRA has been assured that acceptable standards of Good Manufacturing Practice (GMP) are in place for this product at all sites responsible for the manufacture, assembly and batch release of this product.

A Risk Management Plan (RMP) and a summary of the pharmacovigilance system have been provided with this application and are satisfactory.

A marketing authorisation for Testosterone undecanoate 1000 mg/4mL, solution for injection was granted in the United Kingdom on 24 April 2024. Following approval, the MA underwent a change of ownership procedure on 07 June 2024 from the original marketing authorisation holder (MAH), Pharmaceutical Innovation Services S.L. (PL 58081/0001), to the current MAH, Laboratorios Farmalán, S.A. (PL 51412/0005).

II. PRODUCT INFORMATION

SUMMARY OF PRODUCT CHARACTERISTICS (SmPC)

The SmPC is in line with current guidelines and is satisfactory.

PATIENT INFORMATION LEAFLET (PIL)

The PIL is in line with current guidelines and is satisfactory.

LABEL

The labelling is in line with current guidelines and is satisfactory.

III. QUALITY ASPECTS

MHRA considered that the quality data submitted for this application is satisfactory.

The grant of a marketing authorisation was recommended.

IV. NON-CLINICAL ASPECTS

MHRA considered that the non-clinical data submitted for this application is satisfactory.

The grant of a marketing authorisation was recommended.

V. CLINICAL ASPECTS

MHRA considered that the clinical data submitted for this application is satisfactory.

The grant of a marketing authorisation was recommended.

VI. RISK MANAGEMENT PLAN (RMP)

The applicant has submitted an RMP, in accordance with the requirements of Regulation 182 of The Human Medicines Regulation 2012, as amended. In addition to routine pharmacovigilance and risk minimisation measures, additional risk minimisation measures have been proposed (see table below for the risk minimisation measures and pharmacovigilance activities for all safety concerns):

Important Identified Risk: Pulmonary oil microembolism (POME)	
Risk minimisation measures	Routine risk communication: • SmPC sections 4.2, 4.4 and 4.8 Additional risk minimisation measures: Educational Brochure (Administration Guide)
Additional pharmacovigilance activities	Additional pharmacovigilance activities: None

This is acceptable.

VII. USER CONSULTATION

A full colour mock-up of the Patient Information Leaflet (PIL) was provided with the application in accordance with legal requirements, including user consultation.

VIII. OVERALL CONCLUSION, BENEFIT/RISK AND RECOMMENDATION

The quality of the product is acceptable, and no new non-clinical or clinical safety concerns have been identified. The benefit/risk balance is, therefore, considered to be positive.

The Summary of Product Characteristics (SmPC), Patient Information Leaflet (PIL) and labelling are satisfactory.

In accordance with legal requirements, the current approved UK versions of the SmPC and PIL for this product are available on the MHRA website.

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Steps taken after the initial procedure with an influence on the Public Assessment Report (non-safety variations of clinical significance).

Please note that only non-safety variations of clinical significance are recorded below and in the annexes to this PAR. The assessment of safety variations, where significant changes are made, are recorded on the MHRA website or European Medicines Agency (EMA) website. Minor changes to the marketing authorisation are recorded in the current SmPC and/or PIL available on the MHRA website.

Application type	**Scope**	**Product information affected**	**Date of grant**	**Outcome**	**Assessment report attached Y/N**