

# Sublingual estradiol alone versus oral estradiol with cyproterone acetate for the initial treatment of transgender women seeking gender-affirming-hormonal-therapy

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<b>Registration date</b> 16/09/2024	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 01/10/2025	<b>Condition category</b> Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input checked="" type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Gender dysphoria is when a person feels their gender doesn't match the sex they were given at birth. This can cause distress and mental health issues. Treatment helps people live as the gender they identify with, using therapy, hormones, and sometimes surgery. For transgender women (born male), treatment usually combines estradiol (a female hormone) with a drug to block testosterone (a male hormone). The blocking drug can affect sex drive and function, which some patients want to keep. A new method using estradiol under the tongue without a testosterone blocker has become popular online. It claims to give the desired physical changes with less impact on sexual function, but it is unknown if it's safe or effective.

### Who can participate?

Transgender women aged between 18 and 45 years old who have not yet received any hormone treatment

### What does the study involve?

This 6-month study compares two treatments, with participants choosing their preferred treatment, either the intervention of estradiol 0.5 mg under the tongue four times daily without a testosterone blocker, or the standard treatment of oral estradiol 2 mg once daily with the testosterone blocker, cyproterone acetate 10 mg. The daily estradiol dose is identical in both groups. The participants will undergo regular check-ups and tests to see which method works better for physical changes while maintaining sexual function.

### What are the possible benefits and risks of participating?

The new method might help keep sex drive and function while inducing the desired physical changes. In addition, the study will provide participants in both groups with information about the changes in their body composition. The drawback for the new method group is having to take the medication four times daily. No significant risks are expected, but there is a very small chance of blood clots.

Where is the study run from?  
Tel Aviv Sourasky Medical Center

When is the study starting and how long is it expected to run for?  
August 2021 to August 2023

Who is funding the study?  
Tel Aviv Sourasky Medical Center

Who is the main contact?  
Prof. Karen Tordjman, karent@tlvmc.gov.il

## Contact information

**Type(s)**  
Public, Scientific, Principal investigator

**Contact name**  
Prof Karen Tordjman

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## Additional identifiers

**Clinical Trials Information System (CTIS)**  
Nil known

**ClinicalTrials.gov (NCT)**  
Nil known

**Protocol serial number**  
Nil known

## Study information

**Scientific Title**  
Sublingual estradiol alone versus oral estradiol with cyproterone acetate (CPA) for the initial treatment of transgender women seeking gender-affirming-hormonal-therapy (GAHT)- A prospective pilot study at the Transgender Health Clinic of the Institute of Endocrinology at Tel Aviv Sourasky Medical Center

## **Study objectives**

The hypothesis is that in sublingual estradiol treatment serum concentrations of estradiol will be higher than those in women receiving the same dose of oral estradiol, while testosterone and gonadotropins concentrations will remain higher. It is also anticipated that libido and erectile function will be preserved more often in women treated with sublingual estradiol, while breast development is expected to be comparable in both groups.

## **Ethics approval required**

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## **Ethics approval(s)**

approved 01/08/2021, Helsinki Committee of Tel Aviv Sourasky Medical Center (6 Weizmann Street, Tel Aviv, 6423906, Israel; +972- 052 4262350; anetad@tlvmc.gov.il), ref: 0325-21-TLV

## **Study design**

Single-center open-label non-randomized prospective interventional study

## **Primary study design**

Interventional

## **Study type(s)**

Treatment

## **Health condition(s) or problem(s) studied**

Gender-affirming-hormone therapy in treatment-naïve transgender women

## **Interventions**

Self-allocation to the protocol arm by participants to either oral estradiol 2 mg once daily combined with 10 mg of the antiandrogen cyproterone acetate, or 2 mg daily estradiol divided into 4 doses, administered sublingually every 6 hours without the anti-androgen, both for 6 months

## **Intervention Type**

Drug

## **Phase**

Not Applicable

## **Drug/device/biological/vaccine name(s)**

Beta-estradiol, cyproterone acetate

## **Primary outcome(s)**

Testosterone concentration measured using an electro-chemiluminescence assay (COBAS 6000, e 691 modules, 113 Roche, Switzerland), at baseline before treatment, and at the end of the study after 6 months of treatment

## **Key secondary outcome(s)**

The following secondary outcome measures were assessed at baseline and after 6 months unless stated:

1. Gender dysphoria measured using the Gender Dysphoria and Life Satisfaction (GCLS)

questionnaire

2. Libido measured using the Sexual Desire Inventory (SDI) questionnaire

3. Sexual function measured using the International Index of Erectile Function (IIEF) questionnaire

4. Safety measures consisted of an array of biochemical (on an Advia Centaur XP autoanalyzer, Siemens, 110 Germany), hematological (on a Beckman Coulter Counter, IN, USA), and hormonal laboratory (on the Immulite® 2000, Siemens, Germany) variables, drawn at baseline, 3 months, and 6 months

5. Body composition measured using DXA (Lunar Prodigy system, GE Healthcare, Chicago, IL), and by BIA (InBody 770 body composition analyzer, InBody Co., Ltd, Seoul, Korea) at baseline and 6 months

### **Completion date**

01/08/2023

## **Eligibility**

### **Key inclusion criteria**

1. Treatment-naïve transgender women aged 18 years and older seeking gender-affirming therapy (GAHT), at the Transgender Health Center Clinic within the Institute of Endocrinology and Metabolism at Tel Aviv-Sourasky Medical Center

2. Willing to participate in the study

3. Mentally capable of giving informed consent

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Lower age limit**

18 years

### **Upper age limit**

45 years

### **Sex**

Male

### **Total final enrolment**

22

### **Key exclusion criteria**

1. A history of chronic liver or kidney disease,  $GFR \leq 60$  ml/min

2. Hypertriglyceridemia  $> 300$  mg/dl

3. Primary hypogonadism as evidenced by below-normal serum testosterone and elevated gonadotropins

4. A history of malignancy in the preceding 5 years
5. Use of CYP3A4 inducers (phenytoin, rifampin) or inhibitors (ketoconazole, clotrimazole or retroviral drugs such as ritonavir)
6. Smoking
7. Drug or alcohol abuse
8. Previous history of suicide attempt

**Date of first enrolment**

07/11/2021

**Date of final enrolment**

08/06/2022

## Locations

**Countries of recruitment**

Israel

**Study participating centre**

**Tel Aviv Sourasky Medical Center**

6 Weizmann Street

Tel Aviv

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## Sponsor information

**Organisation**

Tel Aviv Sourasky Medical Center

**ROR**

<https://ror.org/04nd58p63>

## Funder(s)

**Funder type**

Hospital/treatment centre

**Funder Name**

Tel Aviv Sourasky Medical Center

**Alternative Name(s)**

Ichilov

**Funding Body Type**  
Government organisation

**Funding Body Subtype**  
Local government

**Location**  
Israel

## Results and Publications

**Individual participant data (IPD) sharing plan**  
The datasets generated and/or analysed during the current study will be published as a supplement to the results publication

**IPD sharing plan summary**  
Published as a supplement to the results publication

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>		13/12/2023	13/09/2024	Yes	No
<a href="#">Results article</a>		22/02/2025	01/10/2025	Yes	No
<a href="#">Dataset</a>		13/09/2024	16/09/2024	No	No
<a href="#">Participant information sheet</a>	AI-generated translation from Hebrew		16/09/2024	No	Yes
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes