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Is Moses laser technology better than conventional holmium laser surgery for an enlarged prostate?

Submission date
15/11/2026

Recruitment status
Not yet recruiting

Registration date
27/11/2026

Overall study status
Ongoing

Last Edited
27/11/2026

Condition category
Urological and Genital Diseases

[X] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Benign prostatic hyperplasia (BPH), commonly known as an enlarged prostate, is a common condition in men as they get older. It can cause difficulties passing urine and, in some cases, a complete inability to urinate. Holmium laser enucleation of the prostate (HoLEP) is an established surgical treatment for this condition. A newer laser technology, known as Moses technology (MoLEP), has been developed to improve the way laser energy is delivered to prostate tissue. The aim of this study is to compare these two surgical techniques and investigate whether Moses technology can improve surgical efficiency, reduce operating time, minimise bleeding and improve early recovery after surgery.

Who can participate?
Men aged 45 years or older who have an enlarged prostate measuring between 50 and 250 ml and require surgical treatment because of urinary symptoms or an inability to pass urine

What does the study involve?
Participants will be randomly allocated by a computer to one of two treatment groups:
1. MoLEP group: Patients will undergo laser prostate surgery using Moses technology
2. HoLEP group: Patients will undergo conventional holmium laser prostate surgery
Participants will have an equal chance of receiving either treatment. All operations will be performed by the same experienced surgeon, who has performed more than 1,000 holmium laser prostate procedures. Information will be collected before, during and after surgery, including the duration of the operation, the amount of prostate tissue removed, laser energy consumption, blood loss, length of hospital stay and any complications.

What are the possible benefits and risks of participating?
Both surgical techniques aim to improve urinary symptoms and quality of life by removing the enlarged prostate tissue responsible for urinary obstruction. Participants may benefit from improved surgical efficiency or reduced bleeding, although it is not yet known whether one technique is superior to the other. Both procedures carry the usual risks associated with laser prostate surgery, including bleeding, infection, temporary urinary incontinence, difficulty

passing urine, the need for a blood transfusion and, occasionally, the need for further surgical intervention. Both groups will receive the same standard of perioperative care. Participation in the study may help improve the surgical treatment of patients with an enlarged prostate in the future.

Where is the study run from?
Saint Luke's Hospital (Greece)

When is the study starting and how long is it expected to run for?
December 2026 to July 2027

Who is funding the study?
Saint Luke's Hospital (Greece)

Who is the main contact?
Dr Spyridon Kampantais, kampantais@urosurg.gr, info@urosurg.gr

Contact information

Type(s)
Scientific, Principal investigator, Public

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Study information

Scientific Title
MOHO trial: a prospective, randomized study comparing MoLEP vs HoLEP for benign prostatic hyperplasia using the Lumenis Moses 2.0 platform

Acronym
MOHO

Study objectives

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 05/11/2026, Scientific Council of Agios Loukas Clinic (552 36 Panorama, Thessaloniki, 55236, Greece; +30 (0)2310380000; info@klinikiagiosloukas.gr), ref: E.E./A/04-11-2026

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Parallel

Purpose
Treatment

Study type(s)

Health condition(s) or problem(s) studied
Benign prostatic hyperplasia (BPH)

Interventions
Central, computer-generated with stratification by: prostate volume bands: 50–100, 101–150, 151–250 cc. Sealed opaque envelopes opened after induction and before fiber setup to minimize bias.

Enucleation of the prostate in men with BPH either with holmium laser enucleation of the prostate (HoLEP) or Moses laser enucleation of the prostate (MoLEP):
1. MoLEP arm: Enucleation of prostate with Lumenis Moses 2.0 with single-use Moses fiber (double-pulse “bubble” technology)
2. HoLEP arm: Same platform using standard multi-use HoLEP fiber

Intervention Type
Procedure/Surgery

Primary outcome(s)
1. Enucleation efficiency measured using enucleated tissue weight/enucleation time (to detect differences in precision/cutting efficiency) at the end of the surgery and at the time of pathological specimen report

Key secondary outcome(s)
1. Hemoglobin drop (g/dL) measured using pre-op Hb minus post-op Hb at ~24±6 hours at preoperatively and on patient's discharge

2. Total operative time (min) measured using from first laser activation to scope-out at the end of the surgery

3. Laser energy per gram (kJ/g) measured using total delivered laser energy / enucleated weight at the end of the surgery and at the time of pathological specimen report

Completion date
01/07/2027

Eligibility

Key inclusion criteria
1. Age ≥45 years
2. Symptomatic BPH or acute renal injury (ARI) (acute retention of urine) indicated for enucleation
3. Prostate volume 50–250 cc (US or MRI within 6 months)
4. Ability to provide informed consent

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
45 Years

Upper age limit
85 Years

Sex
Male

Total final enrolment
0

Key exclusion criteria
1. Perioperative need for therapeutic anticoagulation/antiplatelet therapy (beyond low-dose low molecular weight heparin [LMWH] prophylaxis or low-dose aspirin ≤100 mg/day — these are allowed and will be analyzed in sub-analysis)
2. Known/suspected prostate cancer requiring oncologic surgery
3. Prior prostate surgery for BPH (transurethral resection of the prostate [TURP]/HoLEP/open)
4. Active urinary tract infection (UTI) (must treat and re-schedule)
5. Neurogenic bladder
6. Uncorrected coagulopathy
7. American Society of Anesthesiologists (ASA) IV–V

Date of first enrolment
01/12/2026

Date of final enrolment
31/05/2027

Locations

Countries of recruitment
Greece

Sponsor information

Organisation
St. Luke's Hospital

ROR
https://ror.org/014936814

Funder(s)

Funder type

Funder Name
St. Luke's Hospital

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file			16/11/2026	No	No