EUROPEAN UROLOGY xxx (xxxx) xxx–xxx

available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

Guidelines

Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms

Michael Baboudjian [a,†], *Massimiliano Creta* [b,†], *Nikolaos Pyrgidis* [c], *Lisa Moris* [d,e], *Mesut Berkan Duran* [f], *Cosimo de Nunzio* [g], *Dean Elterman* [h], *Hashim Hashim* [i], *Thomas R.W. Herrmann* [j,k,l], *Markos Karavitakis* [m], *Sachin Malde* [n], *Christopher Netsch* [o], *Malte Rieken* [p], *Vasileios Sakalis* [q,r], *Manuela Tutolo* [s], *Natasha Schouten* [t], *Jean-Nicolas Cornu* [u,*]

[a] *Department of Urology, North Academic Hospital, AP-HM, Marseille, France;* [b] *Department of Neurosciences, Reproductive Sciences and Odontostomatology, University of Naples Federico II, Naples, Italy;* [c] *Department of Urology, University Hospital Munich, Munich, Germany;* [d] *Department of Urology, University Hospitals Leuven, Leuven, Belgium;* [e] *Laboratory of Molecular Endocrinology, KU Leuven, Leuven, Belgium;* [f] *Department of Urology, School of Medicine, Pamukkale University, Kınıklı, Türkiye;* [g] *Department of Urology, Sapienza University, Ospedale Sant'Andrea, Rome, Italy;* [h] *Division of Urology, Department of Surgery, University of Toronto, Toronto, ON, Canada;* [i] *Bristol Urological Institute, Bristol, UK;* [j] *Department of Urology, Spital Thurgau AG, Kantonsspital Frauenfeld, Switzerland;* [k] *Division of Urology, Department of Surgical Sciences, Stellenbosch University, Western Cape, South Africa;* [l] *Hannover Medical School, Hannover, Germany;* [m] *2nd Department of Urology, Lefkos Stavros – The Athens Clinic, Athens, Greece;* [n] *Department of Urology, Guy's and St. Thomas' NHS Foundation Trust, London, UK;* [o] *Department of Urology, Asklepios Klinik Barmbek, Hamburg, Germany;* [p] *University of Basel, Basel, Switzerland;* [q] *Department of Urology, Hippokrateion General Hospital, Thessaloniki, Greece;* [r] *Innovative Surgical Urology Research Hub, Thessaloniki, Greece;* [s] *Department of Urology, Urological Research Institute, IRCCS Ospedale San Raffaele, Milan, Italy;* [t] *European Association of Urology Guidelines Office, Arnhem, The Netherlands;* [u] *Department of Urology, Hôpital Charles Nicolle, CHU Hôpitaux de Rouen, Rouen, France*

Article info

Article history:
Accepted March 20, 2026

Associate Editor:
Alberto Briganti

Keywords:
Male lower urinary tract symptoms
Diagnostics
Conservative management
Patient
Pharmacological management

Abstract

Context: The European Association of Urology (EAU) male lower urinary tract symptoms (MLUTS) Guideline Panel has updated its evidence-based guidelines and recommendations 2026 for the management of MLUTS.
Objectives: To present a summary of the 2026 MLUTS guideline updated with standardised methodology to provide reproducible evidence for the management of MLUTS.
Evidence acquisition: For the 2026 EAU Guidelines on non-neurogenic male LUTS, evidence was identified through a structured review across Medline, EMBASE, and the Cochrane Library, prioritising systematic reviews with meta-analysis, randomised controlled trials and prospective comparative studies. Literature search was conducted from 1 May 2023 to 1 May 2025. A detailed search strategy is available at https://uroweb.org/guidelines/management-of-non-neurogenic-male-luts/publications-appendices.
Evidence synthesis: Clinical practice recommendations were updated across all chapters of the male LUTS guideline based on a structured literature search. Included studies consisted predominantly of systematic reviews, randomised controlled trials, and prospective comparative studies. Updates addressed diagnostic evaluation, conservative and surgical

† These authors contributed equally to this work.
* Corresponding author. Department of Urology, Hôpital Charles Nicolle, CHU Hôpitaux de Rouen, Rouen, France. Tel.: +33 6 12 46 13 44.
E-mail address: jeannicolas.cornu@gmail.com (J.-N. Cornu).

https://doi.org/10.1016/j.eururo.2026.03.020

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

Surgical management
Treatment
European Association of Urology
Guidelines

management of benign prostatic obstruction, and for the first time, a dedicated section on voiding dysfunction in young men.

Conclusions: The 2026 MLUTS Guidelines have been updated by the multidisciplinary Panel of experts employing methodological standards to provide a contemporary evidence base for the management of MLUTS.

Patient summary: The European Association of Urology Male Lower Urinary Tract Symptoms Guidelines Panel has reviewed the available scientific evidence on non-neurogenic male lower urinary tract symptoms to develop international recommendations for the diagnosis and management of men with LUTS.

1. Introduction

Lower urinary tract symptoms (LUTS) are common complaints in adult men and can substantially impair quality of life (QoL), with a substantial and growing economic burden [1,2]. Given that the aetiology of male LUTS is frequently multifactorial, the 2026 EAU update maintains a symptom-centred approach that considers the lower urinary tract as a functional unit rather than focusing exclusively on benign prostatic disease [1,3]. The following terminology is used throughout the document: benign prostatic hyperplasia is a histological diagnosis; benign prostatic enlargement is an anatomical diagnosis, and benign prostatic obstruction (BPO) is a functional/urodynamic diagnosis and is the target when obstruction contributes to symptoms.

The main document covers all male LUTS categories, including LUTS/BPO, storage symptoms, including overactive bladder (OAB), urinary incontinence (UI), nocturia, and underactive bladder (UAB). We herein present a summary of the current version of the 2026 European Association of Urology (EAU) Guidelines on non-neurogenic male LUTS, focusing on recent evolutions and modifications made in the past 2 years, excluding UI and UAB, which have been published elsewhere [4,5]. For the first time, this updated version also covers the topic of voiding dysfunction in young men, while previous documents had always excluded men aged <40 yr.

We also emphasise that guidelines reflect the best available evidence, but do not replace clinical expertise or patient-centred decision-making.

2. Evidence acquisition

For the 2026 EAU Guidelines on non-neurogenic male LUTS, evidence was identified through a structured review across Medline, EMBASE, and the Cochrane Library, prioritising systematic reviews with meta-analysis, randomised controlled trials, and prospective comparative studies. The literature search was conducted from 1 May 2023 to 1 May 2025. A detailed search strategy is available at https://uroweb.org/guidelines/management-of-non-neurogenic-male-luts/publications-appendices.

Recommendations within the Guidelines are developed by the panels to prioritise clinically important care decisions. The strength of each recommendation is determined by the balance between desirable and undesirable consequences of alternative management strategies, the quality of the evidence (including certainty of estimates), and the nature and variability of patient values and preferences. Additional information is available at the EAU website: https://uroweb.org/guidelines.

3. Evidence synthesis

3.1. Male LUTS/BPO

3.1.1. Diagnostic evaluation

The diagnostic evaluation of male LUTS has two principal objectives: (1) to identify underlying causes (Fig. 1), relevant differential diagnoses, and contributing comorbidities, and (2) to define the clinical profile (including risk of progression) to support treatment selection and shared decision-making. Core elements include history, symptom quantification, targeted tests to characterise voiding function and complications, and selective use of invasive diagnostics when results are likely to change management. When a specific symptom or clinical situation exists (eg, haematuria), it should be managed according to specific Guidelines (see Table 1).

3.1.2. History and symptom quantification

A complete medical and surgical history should be obtained, including medication review, lifestyle factors, relevant medical comorbidities (including metabolic and cardiovascular risk), and prior lower urinary tract disease or surgery [6]. Patients should be reassured that LUTS are not, in themselves, evidence of prostate cancer (PCa) [7,8]. Sexual function should be assessed, preferably with validated questionnaires (such as the International Index of Erectile Function [IIEF]) and the Male Sexual Health Questionnaire Ejaculatory Dysfunction (MSHQ-EjD), because baseline erectile and ejaculatory function may influence treatment choice and satisfaction [9,10].

Validated symptom score questionnaires are recommended during the initial assessment and for re-evaluation during and/or after treatment. In addition to the International Prostate Symptom Score (IPSS), broader tools such as ICIQ-MLUTS, DAN-PSS [11,12], and/or the Symptoms of Lower Urinary Tract Dysfunction Research Network instrument (LURN-SI-10) can be useful [13]. Questionnaires are sensitive to change and useful for monitoring but are not disease- or age-specific, and symptom scores alone do not reliably diagnose BPO [14].

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

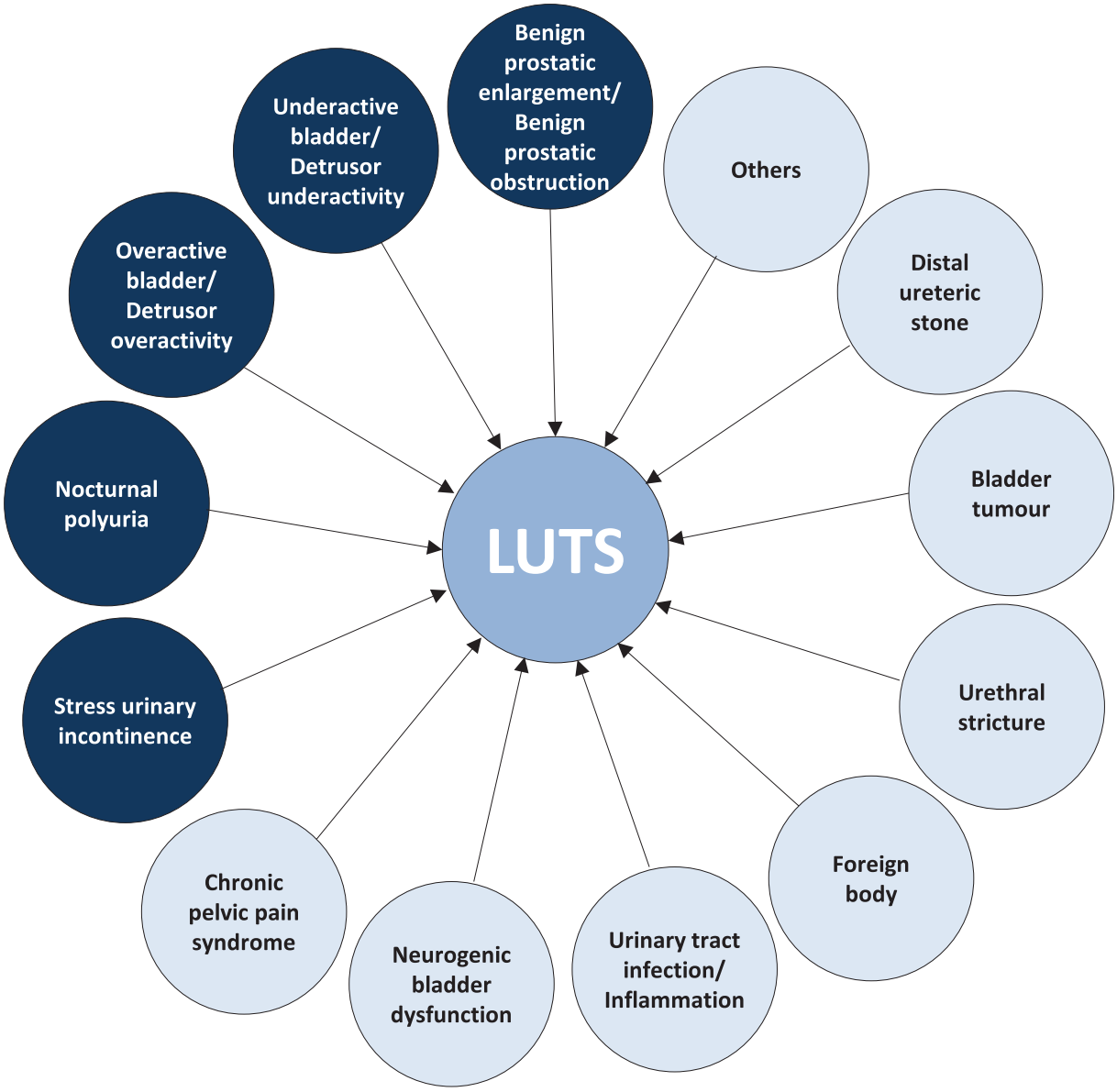

Fig. 1 – Main causes of Male LUTS. LUTS = lower urinary tract symptoms.

3.1.3. Bladder diaries

Bladder diaries (eg, frequency/volume charts [FVCs]) provide reliable, objective documentation of voiding patterns and reduce recall bias [15]. Bladder diaries are the cornerstone of evaluation, particularly for nocturia and predominant storage symptoms. They can quantify daytime frequency, voided volumes, total output, and patterns over time. Completion for at least three days is supported by evidence demonstrating reliable measurement comparable with longer recordings and without loss of diagnostic accuracy [16].

3.1.4. Physical examination and urinalysis

Physical examination should include assessment of the suprapubic region, external genitalia, perineum, and lower limbs, alongside digital rectal examination (DRE) [6]. DRE remains the simplest bedside method to assess prostate size and texture, although correlation with true prostate volume is limited, and underestimation increases with larger glands; transrectal ultrasound (TRUS) is more accurate when volume estimation is clinically required [17,18]. Urinalysis (dipstick or microscopy) should be performed in all men presenting with LUTS to detect urinary tract infection, haematuria, proteinuria and glycosuria, prompting further evaluation according to relevant EAU guidance where indicated [19,20].

3.1.5. Prostate-specific antigen, renal function and risk stratification

Prostate-specific antigen (PSA) may support risk stratification, including prediction of prostate volume and growth and the probability of BPO-related outcomes. Baseline PSA predicts acute urinary retention (AUR) and the need for BPO-related surgery in large trials and longitudinal cohorts [21–23]. PSA testing should be performed when a diagnosis of PCa would change management, and patients should be

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

Table 1 – Recommendations for the diagnostic evaluation of Male LUTS

Recommendation	Strength rating
Take a complete medical and surgical history from men with LUTS.	Strong
Use a validated symptom score questionnaire, including bother and quality of life assessment, during the initial assessment of male LUTS and for re-evaluation during and/or after treatment.	
Use a bladder diary to assess male LUTS, particularly for nocturia.	Strong
Have the patient complete a bladder diary for at least 3 d.	Strong
Perform a physical examination, including digital rectal examination, in the assessment of male LUTS.	Strong
Urinalysis and prostate-specific antigen	
Use urinalysis (by dipstick or microscopy) in the assessment of male LUTS.	Strong
Measure PSA if a diagnosis of prostate cancer will change management.	Strong
Measure PSA if it assists in the treatment and/or decision-making process.	Strong
Counsel patients about PSA testing and the implications of a raised PSA test.	Strong
Renal function, post-void residual and uroflowmetry	
Assess renal function if renal impairment is suspected based on history and clinical examination, or in the presence of hydronephrosis, or when considering surgical treatment for male LUTS.	Strong
Measure post-void residual in the assessment of male LUTS.	Strong
Perform uroflowmetry in the initial assessment of male LUTS.	Weak
Perform uroflowmetry prior to medical or invasive treatment.	Strong
Imaging and urethrocystoscopy	
Perform ultrasound of the upper urinary tract in men with LUTS.	Weak
Perform imaging of the prostate when considering medical treatment for male LUTS, if this assists in the choice of the appropriate drug.	Weak
Perform imaging of the prostate when considering surgical treatment.	Strong
Perform urethrocystoscopy in men with LUTS if the findings may change diagnosis or treatment.	Weak
Pressure-flow studies	
Perform UDS only in individual patients for specific indications prior to invasive treatment or when further evaluation of the underlying pathophysiology of LUTS is warranted.	Weak
Perform UDS in men who have had previous unsuccessful (invasive) treatment for LUTS prior to further invasive treatment.	Weak
Perform UDS in men considering invasive treatment who cannot void > 150 ml.	Weak
Perform UDS when considering surgery in men with bothersome predominantly voiding LUTS and Qmax > 10 ml/s.	Weak
Perform UDS when considering invasive treatment in men with bothersome, predominantly voiding LUTS aged > 80 yr.	Weak
Perform UDS when considering invasive treatment in men with bothersome, predominantly voiding LUTS aged < 50 yr.	Weak
Non-invasive tests in diagnosing bladder outlet obstruction	
Do not offer non-invasive tests as an alternative to urodynamics/pressure-flow studies for diagnosing bladder outflow obstruction in men.	Strong

LUTS = lower urinary tract symptom; PSA = prostate-specific antigen; UDS = urodynamics.

counselled about PSA testing and the implications of a raised PSA [24,25].

Renal function (serum creatinine or estimated glomerular filtration rate [eGFR]) should be assessed when renal impairment is suspected based on history and examination, in the presence of hydronephrosis, or when considering surgical treatment [26–28]. Reduced urinary flow and comorbid hypertension and/or diabetes have been associated with chronic kidney disease in men presenting with LUTS [26,28].

3.1.6. *Post-void residual*

Post-void residual (PVR) measurement is recommended in the assessment of male LUTS [29]. Elevated PVR is not specific for bladder outlet obstruction (BOO) and may reflect obstruction and/or impaired detrusor function; large baseline PVR may predict poorer response to conservative strategies and greater risk of symptom progression in some cohorts, although no definitive PVR threshold guides treatment decisions [22,23,30].

3.1.7. *Uroflowmetry*

Uroflowmetry is a useful noninvasive assessment. Q_{max} (maximum flow rate) is volume dependent and varies within individuals; repeated measurements are advisable when voided volume is low, or flow patterns are atypical, and should reflect the usual voiding pattern at home [31]. Importantly, uroflowmetry alone cannot discriminate BOO from detrusor underactivity or under-filled voids [32,33]. However, a Q_{max} <10 ml/s suggests a high likelihood of the presence of BOO [34]. Uroflowmetry is recommended prior to medical or invasive treatment and can support monitoring of outcomes.

3.1.8. *Imaging, endoscopy and urodynamics*

Upper tract ultrasound is not routinely required for all men with LUTS, as LUTS do not confer increased upper tract malignancy risk compared with the general population [35]. However, ultrasound can be used for men with a large PVR, haematuria or a history of urolithiasis, and offers simultaneous assessment of the bladder, PVR, and prostate with minimal risk and invasiveness [36]. Prostate imaging (transabdominal ultrasound or TRUS) is recommended when considering medical treatment if imaging assists drug choice and when planning surgical treatment [37]. Prostate size and configuration (including median lobe) may influence suitability for some minimally invasive interventions.

Urethrocystoscopy should be performed when findings may change diagnosis or treatment, including evaluation of haematuria, urethral stricture, or a history of bladder cancer, and to assess anatomy relevant to planned intervention (eg, a prostatic middle lobe).

Urodynamics (UDS), including pressure–volume studies (PVS), provides functional diagnosis of BOO/BPO, detrusor overactivity, and detrusor contractility. Routine UDS is not recommended for all men with uncomplicated LUTS before surgery. Evidence from a large, randomised trial supports selective UDS use, as routine testing did not meaningfully

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

reduce surgical rates or improve symptom outcomes [38]. UDS may be considered in individual patients when diagnostic uncertainty exists or when results are likely to alter management (eg, prior unsuccessful invasive therapy, inability to void an adequate volume for reliable flow assessment, or selected age-related considerations) [39,40].

Multiple noninvasive approaches (eg, intravesical prostatic protrusion, bladder/detrusor wall thickness, penile cuff testing) have been studied, but evidence is heterogeneous with variable thresholds and inconsistent performance; therefore, noninvasive tests should not be offered as alternatives to UDS/PVS for diagnosing BOO [34].

3.2. Disease management

Management should align treatment intensity with symptom burden, patient priorities (including sexual function), prostate anatomy, and risk of progression, using shared decision-making and a tailored treatment strategy [1].

3.2.1. Conservative treatment

Watchful waiting is appropriate for men with mild-to-moderate LUTS and limited bother, as many remain stable over time [41]. Conservative management includes education, reassurance, periodic monitoring, and lifestyle advice such as fluid-timing, moderation of caffeine/alcohol intake, double voiding, urethral milking for postmicturition dribble, bladder retraining strategies, medication review, and constipation management [42,43]. Structured self-management programmes improve symptoms and QoL and can reduce progression. Meta-analyses indicate clinically meaningful reductions in IPSS at six months compared with usual care and improvements in QoL, with effects comparable to early drug therapy in the short term [44,45]. A recent randomised trial evaluating application-based physical, psychological, and behavioural interventions added to standard care reported significant improvements in IPSS, health-related QoL, and OAB symptom scores compared with standard care alone [46]. Emerging evidence also supports standardised patient information resources to improve outcomes in primary care [47].

3.2.2. Pharmacological treatment

Alpha-1 adrenoceptor antagonists. α1-blockers reduce smooth muscle tone in the prostate and bladder neck and typically improve both storage and voiding symptoms. Across agents at appropriate doses, symptom reduction is broadly similar [48]. Controlled studies show typical reductions in IPSS of around 30% and modest increases in Q_{max}. Main adverse events include dizziness, asthenia, orthostatic hypotension, and ejaculation disorders, particularly with less selective agents; older men and those with cardiovascular comorbidity may be susceptible [49–51].

5α-reductase inhibitors and other agents. 5α-reductase inhibitors (5-ARIs) are appropriate for men with enlarged prostates and higher progression risk and act by reducing prostate volume over months; large trials show reductions in AUR and BPO-related surgery risk [22,52,53]. The onset of action is slow, and 5-ARIs are only suitable for long-term treatment. The most relevant urological adverse events of 5-ARIs are related to sexual function and include reduced libido, erectile dysfunction (ED), and, less frequently, ejaculatory dysfunction. 5-ARIs reduce serum PSA levels by ~ 50%, which must be taken into account during PCa screening and follow-up. Despite controversial data in the literature [54], the European Medicines Agency has issued a warning about the risk of depression and associated symptoms [55]

Muscarinic receptor antagonists. Muscarinic receptor antagonists improve storage symptoms by inhibiting involuntary detrusor contractions and modulating afferences. They are effective in men with predominant storage LUTS, including urgency and increased frequency [56–58], and can be used as monotherapy or in combination with α1-blockers [59]. When patients are appropriately selected and baseline PVR volume is monitored (typically <150 ml), the risk of AUR is low [60]. Adverse effects include dry mouth, constipation and, less frequently, cognitive effects, particularly in older patients and those receiving nonselective agents.

β3-adrenoceptor agonists. β3-adrenoceptor agonists (mirabegron and vibegron) promote detrusor relaxation during the storage phase, increasing functional bladder capacity without impairing voiding contraction [61]. They improve storage symptoms and QoL and are generally better tolerated than antimuscarinic agents, with a low incidence of dry mouth and constipation [62–66]. β3-agonists have minimal effects on PVR volume and can be safely combined with α1-blockers [67–69]. Cardiovascular safety has been demonstrated in large clinical trials, although blood pressure monitoring is advised in selected patients, with mirabegron being contraindicated in case of severe, uncontrolled hypertension [66]. Further evidence in male patients using vibegron is awaited, as most studies available were conducted with mirabegron.

Phosphodiesterase type 5 inhibitors. Phosphodiesterase type 5 inhibitors (PDE5Is) improve LUTS through smooth muscle relaxation, modulation of afferent nerve activity and improved pelvic perfusion [70]. Tadalafil 5 mg once daily is the only PDE5I approved for the treatment of male LUTS. They are particularly useful in men with concomitant ED, allowing simultaneous treatment of both conditions; however, PDE5Is improve IPSS and IIEF scores, but not Q_{max} [71–77]. They are generally well tolerated but have specific contraindications [78].

Phytotherapy. Phytotherapeutic agents are widely used by patients, but evidence supporting their efficacy is heterogeneous and product-dependent. High-quality randomised trials and systematic reviews have not consistently demonstrated clinically meaningful benefit over placebo [79–82]. Given the low incidence of adverse effects but uncertain efficacy, phytotherapy may be considered only in selected patients who prefer nonprescription options, wish to avoid potential adverse events, and are appropriately counselled.

Combination therapy. Combination therapy should be considered in men with moderate-to-severe LUTS who have insufficient response to monotherapy or who are at increased risk of progression. The combination of an α1-blocker with a 5-ARI provides rapid symptom relief and long-term risk reduction in men with enlarged prostates [83,84]. Add-on therapy with an antimuscarinic or β3-

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

Table 2 – Recommendations for the conservative and pharmacological management of male LUTS

Recommendation	Strength rating
Conservative management	
Offer watchful waiting to men with mild/moderate LUTS who are minimally bothered by their symptoms.	Strong
Offer men with LUTS lifestyle advice and self-care information prior to, or concurrent with, treatment.	Strong
Pharmacological management	
Offer α1-blockers to men with moderate-to-severe LUTS.	Strong
Use 5α-reductase inhibitors (5-ARIs) in men who have moderate-to-severe LUTS and an increased risk of LUTS progression (eg, prostate volume > 40 ml).	Strong
Counsel patients about the slow onset of action and side effects of 5-ARIs.	Strong
Use muscarinic receptor antagonists in men with moderate-to-severe LUTS who mainly have bladder storage symptoms.	Strong
Do not use antimuscarinic overactive bladder medications in men with a post-void residual volume > 150 ml.	Weak
Use β3 agonists in men with moderate-to-severe storage LUTS.	Strong
Use phosphodiesterase type 5 inhibitors in men with moderate-to-severe LUTS with or without erectile dysfunction.	Strong
Offer hexane-extracted *Serenoa repens* to men with LUTS who want to avoid any potential adverse events related in particular to sexual function.	Weak
Inform the patient that the magnitude of efficacy may be modest with hexane extracted *Serenoa repens.*	Strong
Offer combination treatment with an α1-blocker and a 5α-reductase inhibitor to men with moderate-to-severe LUTS and an increased risk of disease progression (eg, prostate volume > 40 ml).	Strong
Use combination treatment of an α1-blocker with a muscarinic receptor antagonist in patients with moderate-to-severe LUTS if relief of storage symptoms has been insufficient with monotherapy with either drug.	Weak
Do not prescribe combination treatment in men with a post-void residual volume > 150 ml.	Weak
Use combination treatment of an α1-blocker with β_3 agonists in patients with persistent storage LUTS after treatment with α1-blocker monotherapy.	Weak
Use combination treatment of an α1-blockers + phosphodiesterase type 5 inhibitors in patients with bothersome LUTS, particularly in patients willing to improve their erectile function.	Weak
Inform the patients that the magnitude of the effect is modest.	Weak

LUTS = lower urinary tract symptom.

agonist may be used for persistent storage symptoms in appropriately selected patients [59,67–69]. α1-blocker plus PDE5I therapy may be considered in men with concomitant ED [74].

Recommendations for the conservative and pharmacological management of MLUTS are provided in Table 2. The global strategy of conservative management is detailed in Fig. 2.

3.2.3. *Surgical treatment of BPO*

Surgical or interventional treatment is indicated in men with LUTS secondary to BPO who have failed conservative or pharmacological therapy, or who develop complications such as recurrent urinary retention, recurrent urinary tract infections, bladder stones, haematuria attributable to BPO, or renal impairment. The selection of surgical technique should be individualised and based on prostate size and configuration, symptom profile, patient priorities (including preservation of ejaculation), comorbidities, bleeding risk and anticoagulation status, anaesthetic fitness, and local expertise [1,85–88]. Each surgical option has its pros and cons, which are thoroughly discussed in the main document. Recommendations are presented in Table 3. The treatment algorithm is presented in Fig. 3.

3.2.3.1. Ablative techniques. Resection techniques. Transurethral resection of the prostate (TURP) remains a reference surgical option for men with small to moderate-sized prostates. Both monopolar and bipolar TURP provide substantial and durable improvements in symptom scores, maximum urinary flow rate and PVR volume [89–95]. Bipolar TURP offers similar efficacy with a lower risk of bleeding, transurethral resection syndrome and electrolyte disturbances, and may therefore be preferred when available [96]. Despite its widely studied positive functional outcomes, TURP is associated with risks of bleeding, ejaculation disorders, and, less commonly, urethral stricture or bladder neck contracture [96–98]. For prostates <30 ml, transurethral incision of the prostate is indicated in the absence of a median lobe [99].

Laser vaporesection has been investigated in the past but plays a progressively smaller role in surgical management since the diffusion of laser enucleation techniques.

Enucleation techniques. Endoscopic enucleation techniques aim at removing the entire obstructing adenomatous tissue down to the surgical capsule. As all transurethral enucleation procedures follow the same surgical principles, the acronym AEEP has been introduced. Anatomical endoscopic enucleation of the prostate (AEEP) describes the removal of the transition zone of the prostate regardless of the energy source used. Holmium laser enucleation of the prostate (HoLEP), bipolar enucleation, and thulium laser enucleation are supported by robust evidence demonstrating durable symptom relief across the full range of prostate sizes, including very large glands [100–103]. These techniques are associated with significant improvements in IPSS, Q_{max}, and PVR volume, with low retreatment rates over long-term follow-up. Although enucleation is associated with longer operative times and a learning curve, it offers advantages in terms of completeness of tissue removal and applicability irrespective of prostate size. When available, these full endoscopic approaches have replaced open prostatectomy, which remains a valuable option only in the absence of EEP availability. Besides short-term complications (including bleeding), AEEP is associated with a risk of transient stress UI and a high risk of definitive ejaculatory dysfunction.

Alternative enucleation approaches, including laparoscopic and robot-assisted simple prostatectomy, are increasingly being used despite the lack of level 1 evidence. Randomised controlled trials against reference options are

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

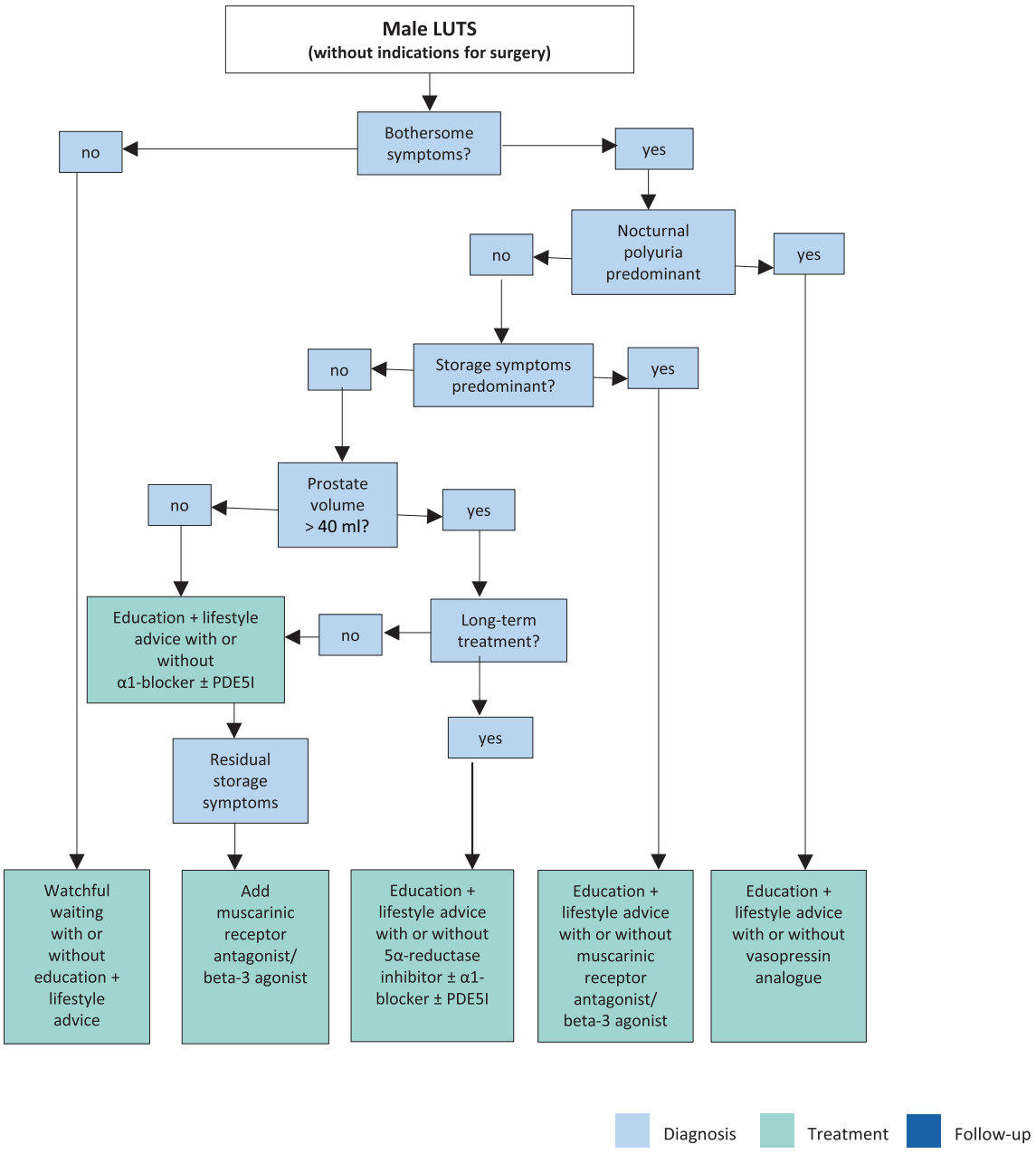

Fig. 2 – Algorithm for male LUTS management. LUTS = lower urinary tract symptoms.

needed to compare the efficacy, safety, hospitalisation times, learning curve and costs of laparoscopic or robot-assisted simple prostatectomy with both open prostatectomy and endoscopic methods.

Vaporisation techniques. Laser vaporisation techniques, using bipolar energy or, most often, 532-nm photoselective vaporisation of the prostate, provide effective symptom relief with reduced intraoperative bleeding and shorter catheterisation times [104,105]. These techniques are particularly suitable for patients receiving anticoagulation or antiplatelet therapy [106–109]. Symptom and flow improvements are generally comparable to TURP in the short to medium term, although retreatment rates may be higher with longer follow-up, particularly in larger prostates [110].

Alternative ablative techniques. Alternative ablative techniques have expanded the surgical armamentarium for BPO. Aquablation uses robotically controlled, image-guided, high-velocity saline jets to ablate prostatic tissue and has demonstrated clinically meaningful improvements in symptoms and urinary flow, particularly in men with moderate-to-large prostates. For prostates up to 80 ml, Aquablation is as effective as TURP, both subjectively and objectively, and has a low incidence of ejaculatory dysfunction [111,112]. Complications include bleeding-related events, although prevented by bladder neck electrocautery at the end of the procedure. The feasibility of Aquablation is established in larger prostates [111]. Short-term comparative studies against enucleation have shown similar efficacy and safety at six months and favourable results

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

Table 3 – Recommendations for interventional treatment

Recommendation	Strength rating
Resection of the prostate	
Offer bipolar- or monopolar-transurethral resection of the prostate to surgically treat moderate-to-severe LUTS in men with prostate size of 30–80 ml.	Strong
Offer laser vaporesection of the prostate using Tm:YAG laser (ThuVARP) as an alternative to transurethral resection of the prostate.	Weak
Offer transurethral incision of the prostate to surgically treat moderate-to-severe LUTS in men with prostate size < 30 ml, without a middle lobe.	Strong
Enucleation of the prostate	
Offer open prostatectomy in the absence of endoscopic enucleation of the prostate to treat moderate-to-severe LUTS/benign prostatic obstruction in men with prostate size > 80 ml.	Strong
Offer bipolar transurethral (plasmakinetic) enucleation of the prostate to men with moderate-to-severe LUTS/benign prostatic obstruction as an alternative to transurethral resection of the prostate.	Weak
Offer laser enucleation of the prostate using Ho:YAG laser (HoLEP) to men with moderate-to-severe LUTS/benign prostatic obstruction as an alternative to transurethral resection of the prostate or open prostatectomy.	Strong
Offer enucleation of the prostate using the Tm:YAG laser (ThuLEP, ThuVEP) to men with moderate-to-severe LUTS/benign prostatic obstruction as an alternative to transurethral resection of the prostate, holmium laser enucleation or bipolar transurethral (plasmakinetic) enucleation.	Weak
Offer Tm:YAG laser enucleation of the prostate to patients receiving anticoagulant or antiplatelet therapy.	Weak
Vaporisation of the prostate	
Offer bipolar transurethral vaporisation of the prostate as an alternative to transurethral resection of the prostate to surgically treat moderate-to-severe LUTS/benign prostatic obstruction in men with a prostate volume of 30–80 ml.	Weak
Offer 80 W 532 nm KTP laser vaporisation of the prostate to men with moderate-to-severe LUTS/BPO with a prostate volume of 30–80 ml as an alternative to TURP.	Strong
Offer 120W 532 nm LBO laser vaporisation of the prostate to men with moderate-to-severe LUTS/BPO with a prostate volume of 30–80 ml as an alternative to TURP.	Strong
Offer 180 W 532 nm LBO laser vaporisation of the prostate to men with moderate-to-severe LUTS/BPO with a prostate volume of 30–80 ml as an alternative to TURP.	Strong
Offer laser vaporisation of the prostate using 80 W KTP, 120 or 180 W LBO lasers for the treatment of patients receiving antiplatelet or anticoagulant therapy with a prostate volume <80 ml.	Weak
Alternative ablative techniques	
Offer Aquablation to patients with moderate-to-severe LUTS/benign prostatic obstruction and a prostate volume of 30–80 ml as an alternative to transurethral resection of the prostate, particularly in patients interested in preserving ejaculatory function.	Strong
Offer PAE[a] to men with moderate-to-severe LUTS/benign prostatic obstruction who wish to consider minimally invasive treatment options and accept less-optimal outcomes compared with transurethral resection of the prostate.	Weak
Perform PAE only in units where the work up and follow-up is performed by urologists working collaboratively with trained interventional radiologists for the identification of PAE suitable patients.	Strong
Non-Ablative techniques	
Offer Prostatic urethral lift (Urolift®) to men with LUTS/benign prostatic obstruction interested in preserving ejaculatory function, with prostates < 70 ml and no middle lobe.	Strong
Advise patients that retreatment rates are higher after PUL compared to transurethral resection of the prostate.	Weak
Do not offer intraprostatic injection treatment to patients with LUTS/benign prostatic obstruction.[b]	Strong

BPO = benign prostatic obstruction; KTP = potassium titanyl phosphate; LBO = lithium borate; LUTS = lower urinary tract symptom; PAE = prostatic artery embolisation; TURP = transurethral resection of the prostate; UDS = urodynamics.

[a] PAE remains under investigation.

[b] Refer to previous editions of the European Association of Urology Guidelines for full rationale.

regarding ejaculatory function and stress UI [113]. Durability against enucleation remains to be established.

3.2.3.2. Nonablative techniques. Prostatic urethral lift. Prostatic urethral lift is conducted under local or general anaesthesia. Lateral lobes are compressed by small permanent suture-based implants delivered under cystoscopic guidance. It can improve LUTS while preserving antegrade ejaculation in selected patients with favourable anatomy and prostate size. Symptom improvements are generally less pronounced than with resection or enucleation [114], and retreatment rates are higher [110]. Adverse events include haematuria, dysuria, pelvic pain, urgency, transient incontinence, and urinary tract infection, but prostatic urethral lift preserves ejaculation function better than TURP [115].

Prostatic artery embolisation. Prostatic artery embolisation represents a minimally invasive radiological approach that reduces prostatic blood flow under local anaesthesia through selective embolisation of prostatic vessels [116,117]. While improvements in symptoms have been reported, functional outcomes appear inferior to TURP, and retreatment rates are higher [118–120]. Prostatic artery embolisation should be offered in experienced centres and after discussion of the relative benefits and limitations, including radiation exposure inherent to the technique and a higher probability of retreatment than after ablative techniques [120].

3.2.3.3. Techniques under investigation. Water vapour thermal therapy (eg, Rezūm) has shown promising short-term improvements in LUTS and flow rates in randomised controlled trials against sham treatment and in multiple cohort studies [121,122]. Evidence at up to 24 months supports the durability of symptom relief and functional improvement, particularly in men prioritising preservation of sexual function and outpatient recovery, although objective improvements are generally greater after TURP [123]. However, comparative evidence against a reference treatment and long-term outcome data are currently limited [122], but results of recent randomised controlled trials against reference treatments are pending [124].

Temporary implantable nitinol devices represent another nonablative option under investigation, with early data suggesting symptom improvement and preservation

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

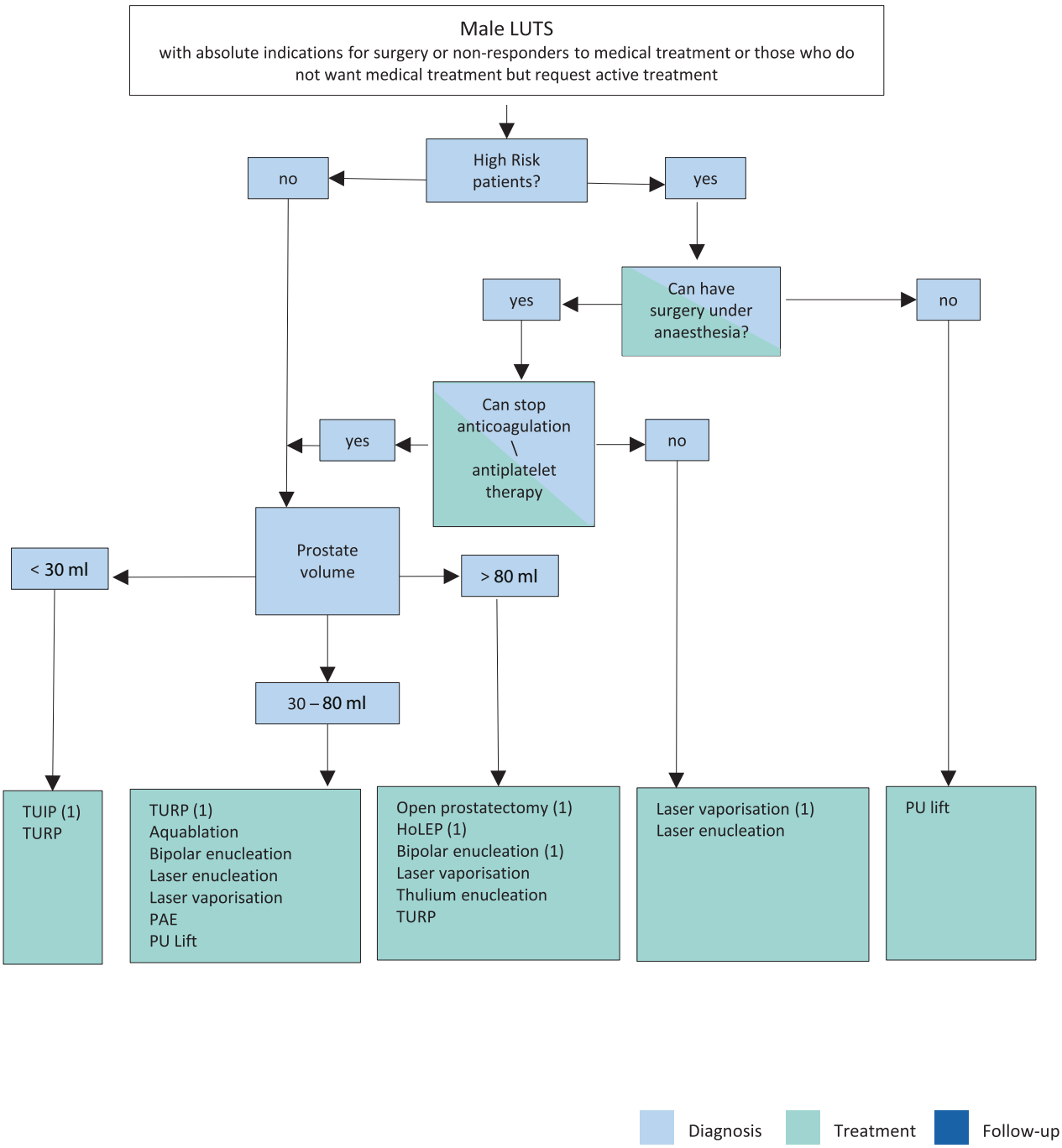

Fig. 3 – Algorithm for interventional treatment. LUTS = lower urinary tract symptoms; PAE = prostatic artery embolisation; TURP = transurethral resection of the prostate.

of sexual function, although long-term data are lacking [125,126]. Randomised controlled trials comparing iTIND with a reference technique are ongoing.

Optilume represents a minimally invasive therapeutic option for BPO and urethral strictures, integrating mechanical dilation with targeted drug delivery (paclitaxel) through a drug-eluting balloon [127]. Despite promising exploratory studies, randomised controlled trials are needed.

Transperineal interstitial laser ablation uses a continuous-wave diode laser, commonly at 1064 nm, that is delivered through transperineal needles guided by ultrasound. The procedure results in localised thermal coagulative necrosis within the prostatic tissue, which decreases prostate volume and alleviates obstruction [128]. Following encouraging initial results, adequately powered randomised controlled trials with longer follow-up comparing transperineal interstitial laser ablation to a reference technique are required.

Overall, surgical management of BPO requires careful patient selection and counselling regarding expected benefits, risks, impact on sexual function and durability of outcomes for each technique.

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

3.2.4. Patient selection

Patient selection integrates symptom severity and bother, risk of progression (including prostate size and PSA where relevant), comorbidity, baseline sexual function, and patient preferences [1,88]. Shared decision-making should address expected benefit, adverse effects, and durability for each option (Fig. 3).

3.2.5. Follow-up

Follow-up should be tailored to the chosen strategy. Men managed conservatively or medically require periodic reassessment of symptoms, QoL, adverse events and complications, with escalation where necessary. After intervention, follow-up should assess symptom response, voiding function, complications and patient satisfaction.

4. Voiding dysfunction in young men

4.1. Epidemiology and diagnosis

Up to 20% of men aged <50 years report at least moderate LUTS [129]. Primary bladder neck obstruction (PBNO) and dysfunctional voiding (DV) are the two most frequent causes of non-neurogenic voiding dysfunction in young men, resulting in functional BOO [130,131].

Patients typically present with long-standing LUTS, often evolving for several years, without any pathognomonic symptom. The clinical spectrum includes storage, voiding, and postmicturition symptoms, with pelvic pain reported in up to 25% of patients with PBNO and recurrent urinary tract infections in nearly 30% [129–136]. No disease-specific questionnaire exists, and validated male LUTS questionnaires, such as IPSS or ICIQ-MLUTS, are commonly used [130]. Uroflowmetry frequently shows reduced Q_{max} and elevated PVR volume, but these parameters lack diagnostic specificity [130,137]. Prostate volume is usually <30 cm^3, although its value for differential diagnosis remains controversial [137,138].

Video-urodynamic studies (VUDS) represent the gold standard for diagnosing PBNO and DV [130]. PBNO is defined by a high-pressure/low-flow pattern with radiographic bladder neck obstruction and sphincter relaxation, whereas DV is characterised by inappropriate external sphincter activity during voiding [130,134,139]. When VUDS is unavailable, combined standard urodynamics and voiding cystourethrography may be considered as an alternative [135]. Magnetic resonance imaging and urethrocystoscopy may be useful in selected cases but are not routinely recommended [130,140] (see Table 4).

4.2. Treatment

The goals of therapies in young men with LUTS secondary to PBNO and DV are improvement of symptoms and QoL, relief of obstruction, prevention of disease-related complications, and preservation of sexual and reproductive health [130]. Overall, the level of evidence on management options is low and the strength rating for recommendations is weak (see Table 5).

4.2.1. Primary bladder neck obstruction

Although observation has been proposed for patients with PBNO with minimal symptom bother and without evidence of urinary tract decompensation, evidence is scarce, and follow-up is inadequate to provide recommendations [130].

Table 4 – Summary of evidence and recommendations for management of voiding dysfunction in young men.

Summary of evidence	LE
Most patients with PBNO and DV complain of long-lasting LUTS, with a mean duration of symptoms before diagnosis reaching up to several years.	4
Videourodynamics represents the gold standard approach for the diagnosis of PBNO and DV.	4
Evaluation of data separately collected by standard UDS and VCUG has been considered a reliable alternative approach by some authors.	4
Electromyography demonstrates relaxation of the striated sphincter concomitant with the detrusor contractions during micturition or an attempt at micturition in PBNO patients and electrical activity of the external sphincter during voiding in DV patients.	4

Recommendations	Strength rating
Suspect PBNO/DV in young men complaining of long-lasting LUTS.	Weak
Perform VUDS studies (or standard urodynamic studies with voiding cysto-urethrography if VUDS studies are unavailable) ± electromyography in young men with suspected PBNO or DV as initial diagnostic assessment or after failed first-line therapy.	Weak

DV = dysfunctional voiding; LUTS = lower urinary tract symptom; PBNO = primary bladder neck obstruction; UDS = urodynamics; VCUG = voiding cystourethrography; VUDS = videourodynamics.

Table 5 – Recommendations for management of voiding dysfunction in young men

Recommendations	Strength rating
Consider α-blockers as first-line treatment in young men with PBNO.	Weak
Consider behavioural modifications plus biofeedback as first-line therapy in young men with DV.	Weak
Consider bladder neck incision or IC in well-informed young men with PBNO unresponsive to α-blockers.	Weak
Consider IC in young men with DV unresponsive to behavioural modifications plus biofeedback.	Weak

DV = dysfunctional voiding; IC = intermittent catheterisation; LUTS = lower urinary tract symptom; PBNO = primary bladder neck obstruction.

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

Alpha-blockers should be considered as the first-line treatment in young men with PBNO. They provide improvements in terms of mean total IPSS (pooled estimate improvement at 3 months: −7.0 points), mean IPSS QoL (pooled estimate at 3 months: −1.7 points), mean Q_{max} (pooled estimate at 3 months: +4.0 ml/s), mean PVR (pooled estimate at 3 months: −31.1 ml), as well BOO index [130]. Unfortunately, high discontinuation rates have been reported (4.7% to 55%), mainly due to unsuccessful outcomes (23% to 52%) and retrograde ejaculation (47% to 50%) [130].

Bladder neck incision should be discussed in young men with PBNO who fail therapy with alpha-blockers. It provides improvements in terms of mean total IPSS (pooled estimate at 3 months: −11.2 points), mean IPSS QoL subscore (range −1.9 to −2.2 points), mean Q_{max} (pooled estimate at 3 months: + 6.9 ml/s), mean PVR (range 7.6 ml to −156 ml) [1]. Unsuccessful outcomes are reported in 0–15.3% of patients, with ejaculatory dysfunction rates ranging from 0% to 88.8% (pooled estimate: 3.0%).

4.2.2. *Dysfunctional voiding*

Behavioural modifications (instructions to relax the pelvic floor muscles during voiding) plus biofeedback should be considered as the first-line approach in young men with DV [139]. This approach has been reported in a single small study to provide a decrease in symptoms of at least 50% in two consecutive visits in 83% of patients with DV at three months [139].

Intermittent catheterisation should be discussed in patients with both PBNO and DV refractory to first-line therapy [130]. OnabotulinumtoxinA (BoNTA) injection therapy and sacral neurostimulation represent experimental approaches in patients with PBNO and DV, respectively [130].

5. Management of underactive bladder

The panel recently published recommendations in the management of underactive bladder which are summarized in Fig. 4 [4].

6. Conclusions

The 2026 EAU update covers the entire spectrum of non-neurogenic male LUTS, including young men. The document reinforces a stepwise, symptom-centred approach to non-neurogenic male LUTS, emphasising structured evaluation, selective use of invasive testing, and individualised selec-

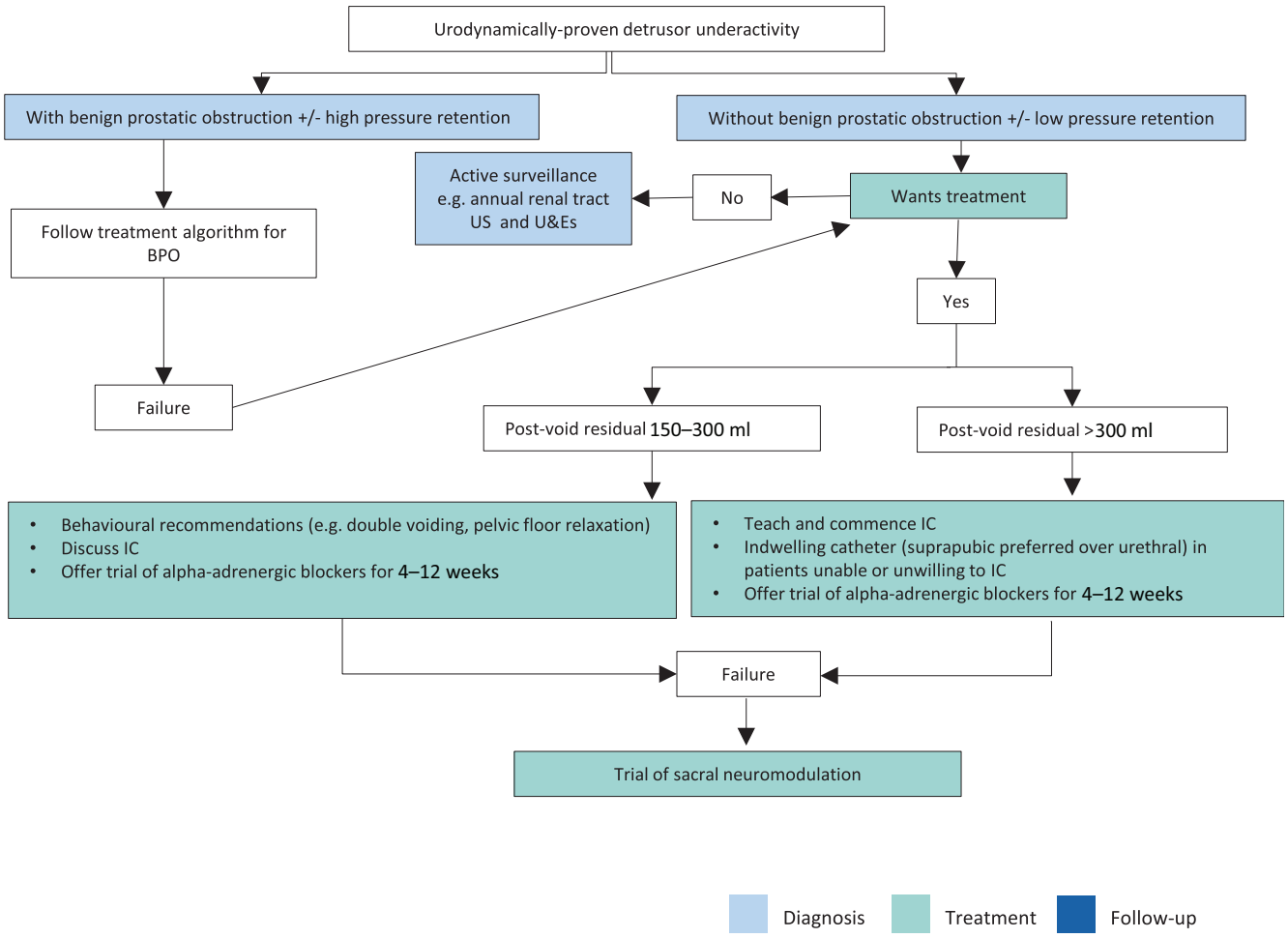

Fig. 4 – Algorithm for management of detrusor underactivity. BPO = benign prostatic obstruction; IC = intermittent catheterization.

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

tion among conservative, pharmacological, and interventional options.

As management primarily aims to improve QoL and involves trade-offs between symptom relief, sexual function, and durability of outcomes, treatment decisions should be personalised and guided by structured shared decision-making.

Author contributions: Jean-Nicolas Cornu had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Jean-Nicolas Cornu, Michael Baboudjian, Massimiliano Creta, Nikolaos Pyrgidis, Lisa Moris, Mesut Berkan Duran, Cosimo De Nunzio, Dean Elterman, Hashim Hashim, Thomas Rw Herrmann, Markos Karavitakis, Sachin Malde, Chritopher Netsch, Malte Rieken, Vassileios Sakalis, Natasha Schouten, Manuela Tutolo.
Acquisition of data: Natasha Schouten.
Analysis and interpretation of data: Jean-Nicolas Cornu, Michael Baboudjian, Massimiliano Creta, Nikolaos Pyrgidis, Lisa Moris, Mesut Berkan Duran, Cosimo De Nunzio, Dean Elterman, Hashim Hashim, Thomas Rw Herrmann, Markos Karavitakis, Sachin Malde, Chritopher Netsch, Malte Rieken, Vassileios Sakalis, Natasha Schouten, Manuela Tutolo.
Drafting of the manuscript: Jean-Nicolas Cornu, Michael Baboudjian, Massimiliano Creta, Nikolaos Pyrgidis.
Critical revision of the manuscript for important intellectual content: Jean-Nicolas Cornu, Michael Baboudjian, Massimiliano Creta, Nikolaos Pyrgidis, Lisa Moris, Mesut Berkan Duran, Cosimo De Nunzio, Dean Elterman, Hashim Hashim, Thomas Rw Herrmann, Markos Karavitakis, Sachin Malde, Chritopher Netsch, Malte Rieken, Vassileios Sakalis, Natasha Schouten, Manuela Tutolo.
Statistical analysis: None.
Obtaining funding: None.
Administrative, technical, or material support: Jean-Nicolas Cornu, Michael Baboudjian, Massimiliano Creta, Nikolaos Pyrgidis, Lisa Moris, Mesut Berkan Duran, Cosimo De Nunzio, Dean Elterman, Hashim Hashim, Thomas Rw Herrmann, Markos Karavitakis, Sachin Malde, Chritopher Netsch, Malte Rieken, Vassileios Sakalis, Natasha Schouten, Manuela Tutolo.
Supervision: Jean-Nicolas Cornu.
Other (specify): None.

Financial Disclosures: I certify that all conflicts of interest, including specific financial interests and relationships and affiliations relevant to the subject matter or materials discussed in the manuscript (eg, employment/ affiliation, grants or funding, consultancies, honoraria, stock ownership or options, expert testimony, royalties, or patents filed, received, or pending), are the following: (please list all conflict of interest with the relevant author's name):
M. Baboudjian reported serving as a company consultant to Coloplast; receiving company speaker honoraria from Ambu A/S and Accord Healthcare; and receiving honoraria or consultation fees from Rocamed and Boston Scientific. M. Creta reported participating in company-sponsored speaker's training events with Medac Pharma S.r.l. J.-N. Cornu reported serving as a company consultant to Stimuli Technology (French), AbbVie, Boston Scientific, Coloplast, B. Braun Medical, Stimuli Technology, Medtronic France S.A.S. Stimuli Technology and Boston Scientific. C. De Nunzio reported receiving company speaker honoraria from Accord, Bayern Ferring, Janssen, Pierre Fabre, Sanophy and Ipsen; receiving fellowship and travel grants from Ipsen, AB Medica, Biostylogit, Pierre Fabre, Janssen, Idipharma; and participating in trials for Stimuli Technology, Janssen, Ipsen, Bayer, Teleflex and Pierre Fabre. D. Elterman reported serving as a company consultant to Boston Scientific, Medi-Tate Ltd., Olympus Corporation, Procept Biorobotics, Zenflow, Inc., Urotronic, Medtronic Inc. and Laborie Medical Technologies Europe B.V; and receiving company speaker honoraria from Atellas Pharma. H. Hashim reported serving as a company consultant to Astellas, Boston Scientific, Medtronic and Tensi +; receiving company speaker honoraria from Astellas and Medtronic; serving as Co-Chair of the International Continence Society, and as Journal Associate Editor for Neurourology and Urodynamics and BJUI Compass; and participating in clinical trials with Astellas, Medtronic, and Boston. T.R.W. Herrmann reported serving as a company consultant to Karl Storz SE & Co. KG. S. Malde reported receiving honoraria or consultation fees from Medtronic. C. Netsch reported serving as a company consultant to Lisa Laser, Olympus, KLS-Martin, Biolitec, and Richard Wolf GmbH; receiving company speaker honoraria from Richard Wolf GmbH and Richard Wolf; and receiving honoraria or consultation fees from Boston Scientific. M. Rieken reported serving as company consultant to Schwabe Pharma and received speaker honoraria from Astellas Pharma, Boston Scientific and Schwabe Pharma. V. Sakalis reported serving as a company consultant to Ipsen Epe; receiving fellowship or travel grants from Anastasios Mavrogenis S.A. and Ariti S.A.; and receiving grants or research support from Demo Pharmaceutical Industry. M. Tutolo reported receiving company speaker honoraria from Pierre Fabre. M. Karavitakis, M.B. Duran, L. Moris, and N. Pyrgidis have nothing to declare.

Funding Support and Role of the Sponsor: None.

References

[1] Cornu JN, Baboudjian M, Netsch C, et al. Management of non-neurogenic male lower urinary tract symptoms: better holistic than sequential. Eur Urol 2025;88:223–7.
[2] Speakman M, Kirby R, Doyle S, Ioannou C. Burden of male lower urinary tract symptoms (LUTS) suggestive of benign prostatic hyperplasia (BPH) - focus on the UK. BJU Int 2015;115:508–19.
[3] Cornu JN, Elterman D, Hashim H, et al. EAU guidelines. arnhem, the Netherlands2026.
[4] Baboudjian M, Hashim H, Bhatt N, et al. Summary paper on underactive bladder from the European Association of Urology guidelines on non-neurogenic male lower urinary tract symptoms. Eur Urol 2024;86:213–20.
[5] Gacci M, Sakalis VI, Karavitakis M, et al. European Association of Urology guidelines on male urinary incontinence. Eur Urol 2022;82:387–98.
[6] Bosch J, Abrams P, Cotterill N, al. e. Lower Urinary Tract Symptoms in Men (Male LUTS): Etiology, Patient Assessment and Predicting Outcome from Therapy. Male lower urinary tract symptoms (LUTS), an international consultation on male LUTS: societe internationale d'Urologie; 2013.
[7] Martin RM, Vatten L, Gunnell D, Romundstad P, Nilsen TIL. Lower urinary tract symptoms and risk of prostate cancer: the HUNT 2 Cohort, Norway. Int J Cancer 2008;123:1924–8.
[8] Young JM, Muscatello DJ, Ward JE. Are men with lower urinary tract symptoms at increased risk of prostate cancer? A systematic review and critique of the available evidence. BJU Int 2000;85:1037–48.
[9] De Nunzio C, Roehrborn CG, Andersson KE, McVary KT. Erectile dysfunction and lower urinary tract symptoms. Eur Urol Focus 2017;3:352–63.
[10] Rosen RC, Catania JA, Althof SE, et al. Development and validation of four-item version of Male Sexual Health Questionnaire to assess ejaculatory dysfunction. Urology 2007;69:805–9.
[11] Donovan JL, Peters TJ, Abrams P, Brookes ST, de aa Rosette JJ, Schafer W. Scoring the short form ICSmaleSF questionnaire. International continence society. J Urol 2000;164:1948–55.
[12] Schou J, Poulsen AL, Nordling J. The value of a new symptom score (DAN-PSS) in diagnosing uro-dynamic infravesical obstruction in BPH. Scand J Urol Nephrol 1993;27:489–92.
[13] Glaser AP, Kristof TW, Judge C, et al. The 10-item LURN symptom index (LURN SI-10) detects additional symptoms and shows

convergent validity with the IPSS in men presenting with lower urinary tract symptoms. Urology 2023;171:184–9.
[14] D'Silva KA, Dahm P, Wong CL. Does this man with lower urinary tract symptoms have bladder outlet obstruction?: the Rational Clinical Examination: a systematic review. JAMA 2014;312:535–42.
[15] Bright E, Drake MJ, Abrams P. Urinary diaries: evidence for the development and validation of diary content, format, and duration. Neurourol Urodyn 2011;30:348–52.
[16] Yap TL, Cromwell DC, Emberton M. A systematic review of the reliability of frequency-volume charts in urological research and its implications for the optimum chart duration. BJU Int 2007;99:9–16.
[17] Weissfeld JL, Fagerstrom RM, O'Brien B, Prostate Lung. Colorectal and Ovarian Cancer Screening Trial Project Team. Quality control of cancer screening examination procedures in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial. Control Clin Trials 2000;21(Suppl.):390S–9S.
[18] Roehrborn CG. Accurate determination of prostate size via digital rectal examination and transrectal ultrasound. Urology 1998;51:19–22.
[19] Kranz J, Bartoletti R, Bruyère F, et al. European Association of Urology guidelines on urological infections: summary of the 2024 guidelines. Eur Urol 2024;86:27–41.
[20] Gontero P, Birtle A, Capoun O, et al. European Association of Urology guidelines on non-muscle-invasive bladder cancer (TaT1 and carcinoma in situ)-a summary of the 2024 guidelines update. Eur Urol 2024;86:531–49.
[21] Roehrborn CG, McConnell J, Bonilla J, et al. Serum prostate specific antigen is a strong predictor of future prostate growth in men with benign prostatic hyperplasia. Proscar long-term efficacy and safety study. J Urol 2000;163:13–20.
[22] McConnell JD, Roehrborn CG, Bautista OM, et al. The long-term effect of doxazosin, finasteride, and combination therapy on the clinical progression of benign prostatic hyperplasia. N Engl J Med 2003;349:2387–98.
[23] Roehrborn CG. Alfuzosin 10 mg once daily prevents overall clinical progression of benign prostatic hyperplasia but not acute urinary retention: results of a 2-year placebo-controlled study. BJU Int 2006;97:734–41.
[24] Tilki D, van den Bergh RCN, Briers E, et al. EAU-EANM-ESTRO-ESUR-ISUP-SIOG guidelines on prostate cancer. Part II-2024 Update: treatment of relapsing and metastatic prostate cancer. Eur Urol 2024;86:164–82.
[25] Cornford P, van den Bergh RCN, Briers E, et al. EAU-EANM-ESTRO-ESUR-ISUP-SIOG guidelines on prostate Cancer-2024 update. Part I: screening, diagnosis, and local treatment with curative intent. Eur Urol 2024;86:148–63.
[26] Rule AD, Jacobson DJ, Roberts RO, et al. The association between benign prostatic hyperplasia and chronic kidney disease in community-dwelling men. Kidney Int 2005;67:2376–82.
[27] Lee JH, Kwon H, Park YW, Cho IC, Min SK. Relationship of estimated glomerular filtration rate with lower urinary tract symptoms/benign prostatic hyperplasia measures in middle-aged men with moderate to severe lower urinary tract symptoms. Urology 2013;82:1381–5.
[28] Hong SK, Lee ST, Jeong SJ, et al. Chronic kidney disease among men with lower urinary tract symptoms due to benign prostatic hyperplasia. BJU Int 2010;105:1424–8.
[29] Rule AD, Jacobson DJ, McGree ME, Girman CJ, Lieber MM, Jacobsen SJ. Longitudinal changes in post-void residual and voided volume among community dwelling men. J Urol 2005;174:1317–21.
[30] Mochtar CA, Kiemeney LA, van Riemsdijk MM, Laguna MP, Debruyne FM, de la Rosette JJMCH. Post-void residual urine volume is not a good predictor of the need for invasive therapy among patients with benign prostatic hyperplasia. J Urol 2006;175:213–6.
[31] Kranse R, van Mastrigt R. Causes for variability in repeated pressure-flow measurements. Urology 2003;61:930–4.
[32] Idzenga T, Pel JJM, van Mastrigt R. Accuracy of maximum flow rate for diagnosing bladder outlet obstruction can be estimated from the ICS nomogram. Neurourol Urodyn 2008;27:97–8.
[33] Siroky MB, Olsson CA, Krane RJ. The flow rate nomogram: I. Development. J Urol 1979;122:665–8.
[34] Malde S, Nambiar AK, Umbach R, et al. Systematic review of the performance of noninvasive tests in diagnosing bladder outlet obstruction in men with lower urinary tract symptoms. Eur Urol 2017;71:391–402.
[35] Thorpe A, Neal D. Benign prostatic hyperplasia. Lancet 2003;361:1359–67.
[36] Grossfeld GD, Coakley FV. Benign prostatic hyperplasia: clinical overview and value of diagnostic imaging. Radiol Clin North Am 2000;38:31–47.
[37] Stravodimos KG, Petrolekas A, Kapetanakis T, et al. TRUS versus transabdominal ultrasound as a predictor of enucleated adenoma weight in patients with BPH: a tool for standard preoperative work-up? Int Urol Nephrol 2009;41:767–71.
[38] Drake MJ, Lewis AL, Young GJ, et al. Diagnostic assessment of lower urinary tract symptoms in men considering prostate surgery: A noninferiority randomised controlled trial of urodynamics in 26 hospitals. Eur Urol 2020;78:701–10.
[39] Young GJ, Metcalfe C, Lane JA, et al. Prostate surgery for men with lower urinary tract symptoms: do we need urodynamics to find the right candidates? Exploratory findings from the UPSTREAM trial. Eur Urol Focus 2022;8:1331–9.
[40] Drake MJ, Iacovelli V, Cruz F, et al. The evidence-based role of urodynamics in men with lower urinary tract symptoms considering prostate surgery: an international expert consensus. Eur Urol Focus. In press. https://doi.org/10.1016/j.euf.2025.12.018.
[41] Netto Jr NR, de Lima ML, Netto MR, D'Ancona CA. Evaluation of patients with bladder outlet obstruction and mild international prostate symptom score followed up by watchful waiting. Urology 1999;53:314–6.
[42] Yap TL, Brown C, Cromwell DA, van der Meulen J, Emberton M. The impact of self-management of lower urinary tract symptoms on frequency-volume chart measures. BJU Int 2009;104:1104–8.
[43] Brown CT, Yap T, Cromwell DA, et al. Self management for men with lower urinary tract symptoms: randomised controlled trial. BMJ 2007;334:25.
[44] Albarqouni L, Sanders S, Clark J, Tikkinen KAO, Glasziou P. Self-management for men with lower urinary tract symptoms: a systematic review and meta-analysis. Ann Fam Med 2021;19:157–67.
[45] Kumar A, Ashraf H, Lal PK, et al. Self-management interventions for men with lower urinary tract symptoms: a systematic review and meta-analysis of randomized controlled trials. Arch Gerontol Geriatr 2025;131:105742.
[46] Gratzke C, Schönburg S, Eger S, et al. A randomized trial of an app-based therapeutic for lower urinary tract symptoms. NEJM Evid 2025;4:EVIDoa2400290.
[47] Drake MJ, Worthington J, Frost J, et al. Treatment of lower urinary tract symptoms in men in primary care using a conservative intervention: cluster randomised controlled trial. BMJ 2023;383:e075219.
[48] Djavan B, Chapple C, Milani S, Marberger M. State of the art on the efficacy and tolerability of alpha1-adrenoceptor antagonists in patients with lower urinary tract symptoms suggestive of benign prostatic hyperplasia. Urology 2004;64:1081–8.
[49] Barendrecht MM, Koopmans RP, de la Rosette JJMCH, Michel MC. Treatment of lower urinary tract symptoms suggestive of benign prostatic hyperplasia: the cardiovascular system. BJU Int 2005;95(Suppl. 4):19–28.
[50] Chapple CR, Montorsi F, Tammela TLJ, et al. Silodosin therapy for lower urinary tract symptoms in men with suspected benign prostatic hyperplasia: results of an international, randomized, double-blind, placebo- and active-controlled clinical trial performed in Europe. Eur Urol 2011;59:342–52.
[51] Nickel JC, Sander S, Moon TD. A meta-analysis of the vascular-related safety profile and efficacy of alpha-adrenergic blockers for symptoms related to benign prostatic hyperplasia. Int J Clin Pract 2008;62:1547–59.
[52] Bengtsen MB, Heide-Jørgensen U, Borre M, Nørgaard M. Long-term risk of benign prostatic hyperplasia-related surgery and acute urinary retention in men treated with 5-alpha reductase inhibitor versus alpha-blocker monotherapy in routine clinical care. Prostate 2023;83:980–9.
[53] Roehrborn CG. BPH progression: concept and key learning from MTOPS, ALTESS, COMBAT, and ALF-ONE. BJU Int 2008;101(Suppl. 3):17–21.
[54] Uleri A, Nicolas Cornu J, Gobbo A, et al. Association of 5α-reductase inhibitors with depression and suicide: a mini systematic review and meta-analysis. Eur Urol Focus 2024;10:751–3.

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

[55] Measures to minimise risk of suicidal thoughts with finasteride and dutasteride medicines 2025. European Medicines Agency. https://www.ema.europa.eu/en/news/measures-minimise-risk-suicidal-thoughts-finasteride-dutasteride-medicines.
[56] Herschorn S, Jones JS, Oelke M, MacDiarmid S, Wang JT, Guan Z. Efficacy and tolerability of fesoterodine in men with overactive bladder: a pooled analysis of 2 phase III studies. Urology 2010;75:1149–55.
[57] Chapple CR, Roehrborn CG. A shifted paradigm for the further understanding, evaluation, and treatment of lower urinary tract symptoms in men: focus on the bladder. Eur Urol 2006;49:651–8.
[58] Kaplan SA, Goldfischer ER, Steers WD, Gittelman M, Andoh M, Forero-Schwanhaeuser S. Solifenacin treatment in men with overactive bladder: effects on symptoms and patient-reported outcomes. Aging Male 2010;13:100–7.
[59] Lenfant L, Pinar U, Roupret M, Mozer P, Chartier-Kastler E, Seisen T. Role of antimuscarinics combined with alpha-blockers in the management of urinary storage symptoms in patients with benign prostatic hyperplasia: an updated systematic review and meta-analysis. J Urol 2023;209:314–24.
[60] Chapple C, Oelke M, Kaplan SA, Scholfield D, Arumi D, Wagg AS. Fesoterodine clinical efficacy and safety for the treatment of overactive bladder in relation to patient profiles: a systematic review. Curr Med Res Opin 2015;31:1201–43.
[61] Andersson KE. On the site and mechanism of action of β3-Adrenoceptor agonists in the bladder. Int Neurourol J 2017;21:6–11.
[62] Dey A, Georgiadis G, Umezurike J, et al. Mirabegron versus placebo and other therapeutic modalities in the treatment of patients with overactive bladder syndrome-a systematic review. Eur Urol Focus 2025;11:323–36.
[63] Nitti VW, Auerbach S, Martin N, Calhoun A, Lee M, Herschorn S. Results of a randomized phase III trial of mirabegron in patients with overactive bladder. J Urol 2013;189:1388–95.
[64] Khullar V, Amarenco G, Angulo JC, et al. Efficacy and tolerability of mirabegron, a β(3)-adrenoceptor agonist, in patients with overactive bladder: results from a randomised European-Australian phase 3 trial. Eur Urol 2013;63:283–95.
[65] Herschorn S, Barkin J, Castro-Diaz D, et al. A phase III, randomized, double-blind, parallel-group, placebo-controlled, multicentre study to assess the efficacy and safety of the β3 adrenoceptor agonist, mirabegron, in patients with symptoms of overactive bladder. Urology 2013;82:313–20.
[66] Chapple CR, Kaplan SA, Mitcheson D, et al. Randomized double-blind, active-controlled phase 3 study to assess 12-month safety and efficacy of mirabegron, a β(3)-adrenoceptor agonist, in overactive bladder. Eur Urol 2013;63:296–305.
[67] Staskin D, Owens-Grillo J, Thomas E, Rovner E, Cline K, Mujais S. Efficacy and safety of vibegron for persistent symptoms of overactive bladder in men being pharmacologically treated for benign prostatic hyperplasia: results from the Phase 3 randomized controlled COURAGE trial. J Urol 2024;212:256–66.
[68] Kaplan SA, Herschorn S, McVary KT, et al. Efficacy and Safety of mirabegron versus Placebo Add-On Therapy in Men with overactive bladder Symptoms Receiving tamsulosin for Underlying benign prostatic hyperplasia: a Randomized, Phase 4 Study (PLUS). J Urol 2020;203:1163–71.
[69] Kakizaki H, Lee KS, Yamamoto O, et al. Mirabegron add-on therapy to tamsulosin for the treatment of overactive bladder in men with lower urinary tract symptoms: a randomized, placebo-controlled study (MATCH). Eur Urol Focus 2020;6:729–37.
[70] Giuliano F, Ückert S, Maggi M, Birder L, Kissel J, Viktrup L. The mechanism of action of phosphodiesterase type 5 inhibitors in the treatment of lower urinary tract symptoms related to benign prostatic hyperplasia. Eur Urol 2013;63:506–16.
[71] Donatucci CF, Brock GB, Goldfischer ER, et al. Tadalafil administered once daily for lower urinary tract symptoms secondary to benign prostatic hyperplasia: a 1-year, open-label extension study. BJU Int 2011;107:1110–6.
[72] Oelke M, Shinghal R, Sontag A, Baygani SK, Donatucci CF. Time to onset of clinically meaningful improvement with tadalafil 5 mg once daily for lower urinary tract symptoms secondary to benign prostatic hyperplasia: analysis of data pooled from 4 pivotal, double-blind, placebo controlled studies. J Urol 2015;193:1581–9.
[73] Wang Y, Bao Y, Liu J, Duan L, Cui Y. Tadalafil 5 mg once daily Improves lower urinary tract symptoms and erectile dysfunction: a systematic review and meta-analysis. Low Urin Tract Symptoms 2018;10:84–92.
[74] Gacci M, Corona G, Salvi M, et al. A systematic review and meta-analysis on the use of phosphodiesterase 5 inhibitors alone or in combination with alpha-blockers for lower urinary tract symptoms due to benign prostatic hyperplasia. Eur Urol 2012;61:994–1003.
[75] Guo B, Chen X, Wang M, Hou H, Zhang Z, Liu M. Comparative effectiveness of tadalafil versus tamsulosin in treating lower urinary tract symptoms suggestive of benign prostate hyperplasia: a meta-analysis of randomized controlled trials. Med Sci Monit 2020;26:e923179.
[76] Pattanaik S, Mavuduru RS, Panda A, et al. Phosphodiesterase inhibitors for lower urinary tract symptoms consistent with benign prostatic hyperplasia. Cochrane Database Syst Rev 2018;11:CD010060.
[77] Nagasubramanian S, John NT, Antonisamy B, et al. Tamsulosin and placebo vs tamsulosin and tadalafil in male lower urinary tract symptoms: a double-blinded, randomised controlled trial. BJU Int 2020;125:718–24.
[78] ENERGY MARKET AUTHORITY OF SINGAPORE. Tadalafil Lilly: EPAR - product information. European Medicines Agency. https://www.ema.europa.eu/en/medicines/human/EPAR/tadalafil-lilly.
[79] Russo GI, Scandura C, Di Mauro M, et al. Clinical efficacy of Serenoa repens versus placebo versus alpha-blockers for the treatment of lower urinary tract symptoms/benign prostatic enlargement: a systematic review and network meta-analysis of randomized placebo-controlled clinical trials. Eur Urol Focus 2021;7:420–31.
[80] Vela-Navarrete R, Alcaraz A, Rodríguez-Antolín A, et al. Efficacy and safety of a hexanic extract of Serenoa repens (permixon®) for the treatment of lower urinary tract symptoms associated with benign prostatic hyperplasia (LUTS/BPH): systematic review and meta-analysis of randomised controlled trials and observational studies. BJU Int 2018;122:1049–65.
[81] Novara G, Giannarini G, Alcaraz A, et al. Efficacy and safety of hexanic Lipidosterolic extract of Serenoa repens (permixon) in the treatment of lower urinary tract symptoms due to benign prostatic hyperplasia: systematic review and meta-analysis of randomized controlled trials. Eur Urol Focus 2016;2:553–61.
[82] Tacklind J, MacDonald R, Rutks I, Wilt TJ. Serenoa repens for benign prostatic hyperplasia. Cochrane Database Syst Rev 2009;2:CD001423.
[83] Roehrborn CG, Siami P, Barkin J, et al. The effects of dutasteride, tamsulosin and combination therapy on lower urinary tract symptoms in men with benign prostatic hyperplasia and prostatic enlargement: 2-year results from the CombAT study. J Urol 2008;179:616–21.
[84] Roehrborn CG, Siami P, Barkin J, et al. The effects of combination therapy with dutasteride and tamsulosin on clinical outcomes in men with symptomatic benign prostatic hyperplasia: 4-year results from the CombAT study. Eur Urol 2010;57:123–31.
[85] Mariappan P, Brown DJG, McNeill AS. Intravesical prostatic protrusion is better than prostate volume in predicting the outcome of trial without catheter in white men presenting with acute urinary retention: a prospective clinical study. J Urol 2007;178:573–7.
[86] Tan YH, Foo KT. Intravesical prostatic protrusion predicts the outcome of a trial without catheter following acute urine retention. J Urol 2003;170:2339–41.
[87] Arnolds M, Oelke M. Positioning invasive versus noninvasive urodynamics in the assessment of bladder outlet obstruction. Curr Opin Urol 2009;19:55–62.
[88] Baboudjian M, De Nunzio C, Cornu JN. Current guidelines for the management of benign prostatic obstruction: practical tips for patient selection to achieve optimal outcomes. Eur Urol Focus 2025;11:579–81.
[89] Alexander CE, Scullion MM, Omar MI, et al. Bipolar versus monopolar transurethral resection of the prostate for lower urinary tract symptoms secondary to benign prostatic obstruction. Cochrane Database Syst Rev 2019;12:CD009629.
[90] Cornu JN, Ahyai S, Bachmann A, et al. A systematic review and meta-analysis of functional outcomes and complications following transurethral procedures for lower urinary tract symptoms resulting from benign prostatic obstruction: an update. Eur Urol 2015;67:1066–96.
[91] Eredics K, Wachabauer D, Röthlin F, Madersbacher S, Schauer I. Reoperation rates and mortality after transurethral and open

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

prostatectomy in a long-term nationwide analysis: have we improved over a decade? Urology 2018;118:152–7.
[92] Madersbacher S, Lackner J, Brössner C, et al. Reoperation, myocardial infarction and mortality after transurethral and open prostatectomy: a nation-wide, long-term analysis of 23,123 cases. Eur Urol 2005;47:499–504.
[93] Madersbacher S, Marberger M. Is transurethral resection of the prostate still justified? BJU Int 1999;83:227–37.
[94] Mamoulakis C, Ubbink DT, de la Rosette JJMCH. Bipolar versus monopolar transurethral resection of the prostate: a systematic review and meta-analysis of randomized controlled trials. Eur Urol 2009;56:798–809.
[95] Reich O, Gratzke C, Stief CG. Techniques and long-term results of surgical procedures for BPH. Eur Urol 2006;49:970–8.
[96] Treharne C, Crowe L, Booth D, Ihara Z. Economic value of the transurethral resection in saline system for treatment of benign prostatic hyperplasia in England and Wales: systematic review, meta-analysis, and cost-consequence model. Eur Urol Focus 2018;4:270–9.
[97] Akman T, Binbay M, Tekinarslan E, et al. Effects of bipolar and monopolar transurethral resection of the prostate on urinary and erectile function: a prospective randomized comparative study. BJU Int 2013;111:129–36.
[98] El-Assmy A, ElShal AM, Mekkawy R, El-Kappany H, Ibrahiem EHI. Erectile and ejaculatory functions changes following bipolar versus monopolar transurethral resection of the prostate: a prospective randomized study. Int Urol Nephrol 2018;50:1569–76.
[99] Lourenco T, Shaw M, Fraser C, MacLennan G, N'Dow J, Pickard R. The clinical effectiveness of transurethral incision of the prostate: a systematic review of randomised controlled trials. World J Urol 2010;28:23–32.
[100] Huang SW, Tsai CY, Tseng CS, et al. Comparative efficacy and safety of new surgical treatments for benign prostatic hyperplasia: systematic review and network meta-analysis. BMJ 2019;367:l5919.
[101] Zhang Y, Yuan P, Ma D, et al. Efficacy and safety of enucleation vs. resection of prostate for treatment of benign prostatic hyperplasia: a meta-analysis of randomized controlled trials. Prostate Cancer Prostatic Dis 2019;22:493–508.
[102] Arcaniolo D, Manfredi C, Veccia A, et al. Bipolar endoscopic enucleation versus bipolar transurethral resection of the prostate: an ESUT systematic review and cumulative analysis. World J Urol 2020;38:1177–86.
[103] Hartung FO, Kowalewski KF, von Hardenberg J, et al. Holmium versus thulium laser enucleation of the prostate: a systematic review and meta-analysis of randomized controlled trials. Eur Urol Focus 2022;8:545–54.
[104] Thomas JA, Tubaro A, Barber N, et al. A multicenter randomized noninferiority trial comparing GreenLight-XPS laser vaporization of the prostate and transurethral resection of the prostate for the treatment of benign prostatic obstruction: two-yr outcomes of the GOLIATH study. Eur Urol 2016;69:94–102.
[105] Elmansy H, Baazeem A, Kotb A, et al. Holmium laser enucleation versus photoselective vaporization for prostatic adenoma greater than 60 ml: preliminary results of a prospective, randomized clinical trial. J Urol 2012;188:216–21.
[106] Chung DE, Wysock JS, Lee RK, Melamed SR, Kaplan SA, Te AE. Outcomes and complications after 532 nm laser prostatectomy in anticoagulated patients with benign prostatic hyperplasia. J Urol 2011;186:977–81.
[107] Reich O, Bachmann A, Siebels M, Hofstetter A, Stief CG, Sulser T. High power (80 W) potassium-titanyl-phosphate laser vaporization of the prostate in 66 high risk patients. J Urol 2005;173:158–60.
[108] Ruszat R, Wyler S, Forster T, et al. Safety and effectiveness of photoselective vaporization of the prostate (PVP) in patients on ongoing oral anticoagulation. Eur Urol 2007;51:1031–8.
[109] Sandhu JS, Ng CK, Gonzalez RR, Kaplan SA, Te AE. Photoselective laser vaporization prostatectomy in men receiving anticoagulants. J Endourol 2005;19:1196–8.
[110] Feiertag JH, Kane JA, Clark JY. Incidence of surgical reintervention for benign prostatic hyperplasia following prostatic urethral lift, transurethral resection of the prostate, and photoselective vaporization of the prostate: a TriNetX analysis. Eur Urol Open Sci 2024;59:63–70.
[111] Gilling P, Barber N, Bidair M, et al. WATER: A double-blind, randomized, controlled trial of aquablation® vs transurethral resection of the prostate in benign prostatic hyperplasia. J Urol 2018;199:1252–61.
[112] Kasivisvanathan V, Hussain M. Aquablation versus transurethral resection of the prostate: 1 year United States - cohort outcomes. Can J Urol 2018;25:9317–22.
[113] Bhatia A, Titus R, Porto JG, et al. Comparing outcomes of Aquablation versus holmium laser enucleation of prostate in the treatment of benign prostatic hyperplasia: a network meta-analysis. BJUI Compass 2024;5:1231–45.
[114] Jung JH, Reddy B, McCutcheon KA, et al. Prostatic urethral lift for the treatment of lower urinary tract symptoms in men with benign prostatic hyperplasia. Cochrane Database Syst Rev 2019;5:CD012832.
[115] Sønksen J, Barber NJ, Speakman MJ, et al. Prospective, randomized, multinational study of prostatic urethral lift versus transurethral resection of the prostate: 12-month results from the BPH6 study. Eur Urol 2015;68:643–52.
[116] Abt D, Hechelhammer L, Müllhaupt G, et al. Comparison of prostatic artery embolisation (PAE) versus transurethral resection of the prostate (TURP) for benign prostatic hyperplasia: randomised, open label, non-inferiority trial. BMJ 2018;361:k2338.
[117] Zhang JL, Wang MQ, Shen YG, et al. Effectiveness of Contrast-enhanced MR angiography for visualization of the prostatic artery prior to prostatic arterial Embolization. Radiology 2019;291:370–8.
[118] Zumstein V, Betschart P, Vetterlein MW, et al. Prostatic artery embolization versus standard surgical treatment for lower urinary tract symptoms secondary to benign prostatic hyperplasia: a systematic review and meta-analysis. Eur Urol Focus 2019;5:1091–100.
[119] Müllhaupt G, Hechelhammer L, Graf N, et al. Prostatic artery embolisation versus transurethral resection of the prostate for benign prostatic obstruction: 5-year outcomes of a randomised, open-label, noninferiority trial. Eur Urol Focus 2024;10:788–95.
[120] Lewer O, Felice MD, Copelan O, et al. Prostate size and its effect on lower urinary tract symptoms/benign prostatic hyperplasia improvement after convective water vapor thermal therapy. J Urol 2025;214:48–57.
[121] McVary KT, Gange SN, Gittelman MC, et al. Erectile and ejaculatory function preserved with convective water vapor energy treatment of lower urinary tract symptoms secondary to benign prostatic hyperplasia: randomized controlled study. J Sex Med 2016;13:924–33.
[122] Kang TW, Jung JH, Hwang EC, Borofsky M, Kim MH, Dahm P. Convective radiofrequency water vapour thermal therapy for lower urinary tract symptoms in men with benign prostatic hyperplasia. Cochrane Database Syst Rev 2020;3:CD013251.
[123] Cornu JN, Zantek P, Burtt G, et al. Minimally invasive treatments for benign prostatic obstruction: a systematic review and network meta-analysis. Eur Urol 2023;83:534–47.
[124] ClinicalTrials.gov. REZ■M vs. Dual Drug Therapy for Symptomatic benign prostatic hyperplasia in Sexually Active Men (VAPEUR); 2021. https://clinicaltrials.gov/study/NCT04838769?tab=study&a=3.
[125] Chughtai B, Elterman D, Shore N, et al. The iTind temporarily implanted nitinol device for the treatment of lower urinary tract symptoms secondary to benign prostatic hyperplasia: a multicenter, randomized, controlled trial. Urology 2021;153:270–6.
[126] Porpiglia F, Fiori C, Amparore D, et al. Second-generation of temporary implantable nitinol device for the relief of lower urinary tract symptoms due to benign prostatic hyperplasia: results of a prospective, multicentre study at 1 year of follow-up. BJU Int 2019;123:1061–9.
[127] Kaplan SA, Pichardo M, Rijo E, Espino G, Lay RR, Estrella R. One-year outcomes after treatment with a drug-coated balloon catheter system for lower urinary tract symptoms related to benign prostatic hyperplasia. Prostate Cancer Prostatic Dis 2021;24:1073–9.
[128] de Rienzo G, Lorusso A, Minafra P, et al. Transperineal interstitial laser ablation of the prostate, a novel option for minimally invasive treatment of benign prostatic obstruction. Eur Urol 2021;80:95–103.

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020

[129] Boyle P, Robertson C, Mazzetta C, et al. The prevalence of lower urinary tract symptoms in men and women in four centres. The UrEpik study. BJU Int 2003;92:409–14.
[130] Creta M, Baboudjian M, Sakalis V, et al. Management of primary bladder neck obstruction and dysfunctional voiding in young men: a systematic review and meta-analysis. Eur Urol Focus 2025;11:496–507.
[131] Kaplan SA, Ikeguchi EF, Santarosa RP, et al. Etiology of voiding dysfunction in men less than 50 years of age. Urology 1996;47:836–9.
[132] Nitti VW, Lefkowitz G, Ficazzola M, Dixon CM. Lower urinary tract symptoms in young men: videourodynamic findings and correlation with noninvasive measures. J Urol 2002;168:135–8.
[133] Gupta NK, Gaur S, Pal DK. Role of videourodynamics in the identification of causes of lower urinary tract symptoms and low uroflow in young men. Urol Ann 2022;14:332–5.
[134] Poulsen EU, Kirkeby HJ. Symptomatology and urodynamic findings in younger males with bladder neck dysfunction. Scand J Urol Nephrol Suppl 1989;125:59–63.
[135] El Khoury J, Hermieu N, Chesnel C, et al. Primary bladder neck obstruction in men: the importance of urodynamic assessment and cystourethrography in measuring its severity. Neurourol Urodyn 2024;43:874–82.
[136] Yani MS, Eckel SP, Kirages DJ, Rodriguez LV, Corcos DM, Kutch JJ. Impaired ability to relax pelvic floor muscles in men with chronic prostatitis/chronic pelvic pain syndrome. Phys Ther 2022;102:pzac059.
[137] Wang CC, Yang SSD, Chen YT, Hsieh JH. Videourodynamics identifies the causes of young men with lower urinary tract symptoms and low uroflow. Eur Urol 2003;43:386–90.
[138] Schifano N, Capogrosso P, Matloob R, et al. Patients presenting with lower urinary tract symptoms who most deserve to be investigated for primary bladder neck obstruction. Sci Rep 2021;11:4167.
[139] Kaplan SA, Santarosa RP, D'Alisera PM, et al. Pseudodyssynergia (contraction of the external sphincter during voiding) misdiagnosed as chronic nonbacterial prostatitis and the role of biofeedback as a therapeutic option. J Urol 1997;157:2234–7.
[140] Di Girolamo M, Mariani S, Barelli GM, Rosati E, Trucchi A, Laghi A. MRI and MR voiding cystourethrography in the evaluation of male primary bladder neck obstruction: preliminary experience. Abdom Radiol (NY) 2022;47:746–56.

Please cite this article as: M. Baboudjian, M. Creta, N. Pyrgidis et al., Summary Paper on the 2026 European Association of Urology Guidelines on the Management of Non-neurogenic Male Lower Urinary Tract Symptoms, Eur Urol (2026), https://doi.org/10.1016/j.eururo.2026.03.020