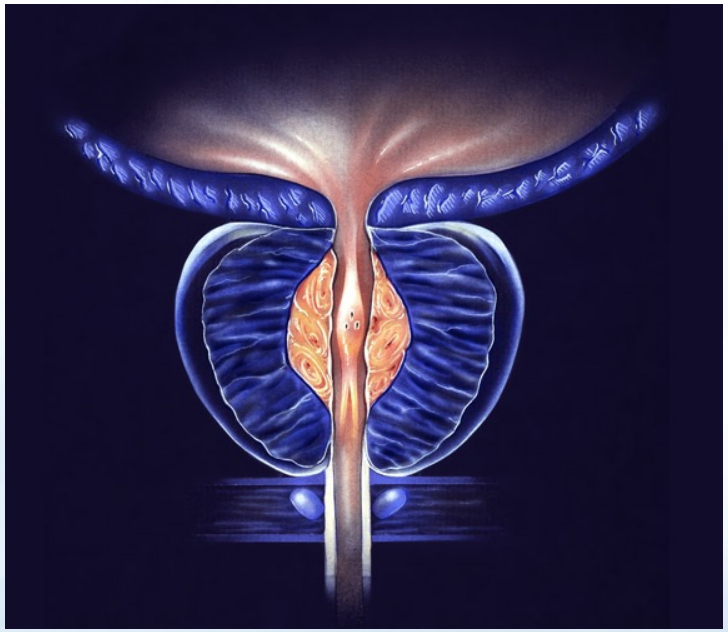
Making Sense of BPH: Which Treatment for Which Patient?



Credit: Judith Glick - stock.adobe.com

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Disclosures: Seth Bechis

- Consultant
  - Boston Scientific
  - Dornier
  - Ambu Medical
  - Calyxo
  - BD
  - Olympus
- Speaker
  - Cook Medical
  - Karl Storz Endoscopy

- Acknowledgments: Ken McVary, Naeem Bhojani, Jonathan Katz

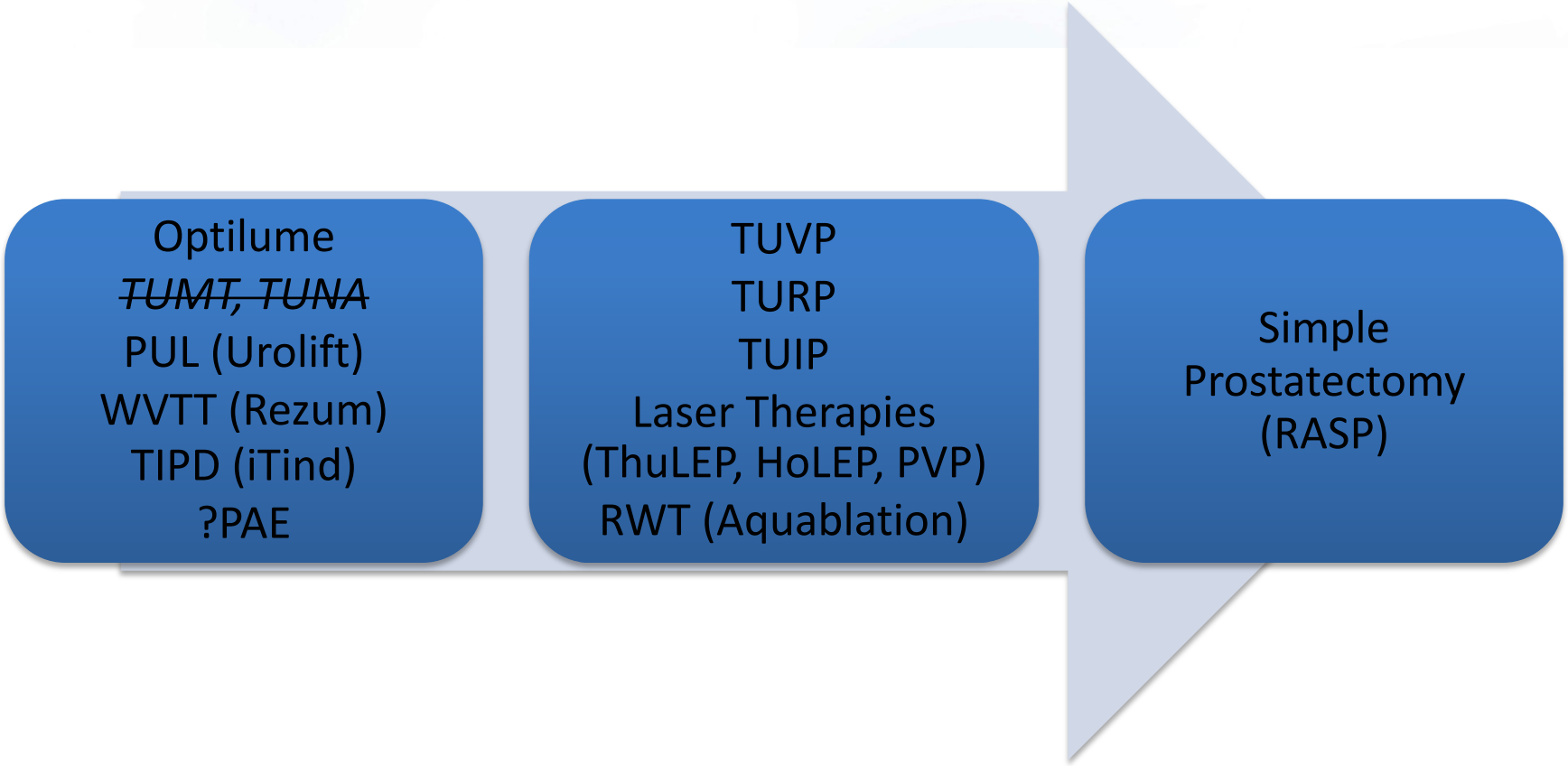
Disclosures: Seth Bechis

- I Perform:
  - PUL (Urolift)
  - WVTT (Rezum)
  - Greenlight PVP
  - TURP
  - Robotic prostatectomy
- I Do Not Perform:
  - HoLEP
  - RWT (Aquablation)
  - TIPD (iTind)

Goals of this Talk

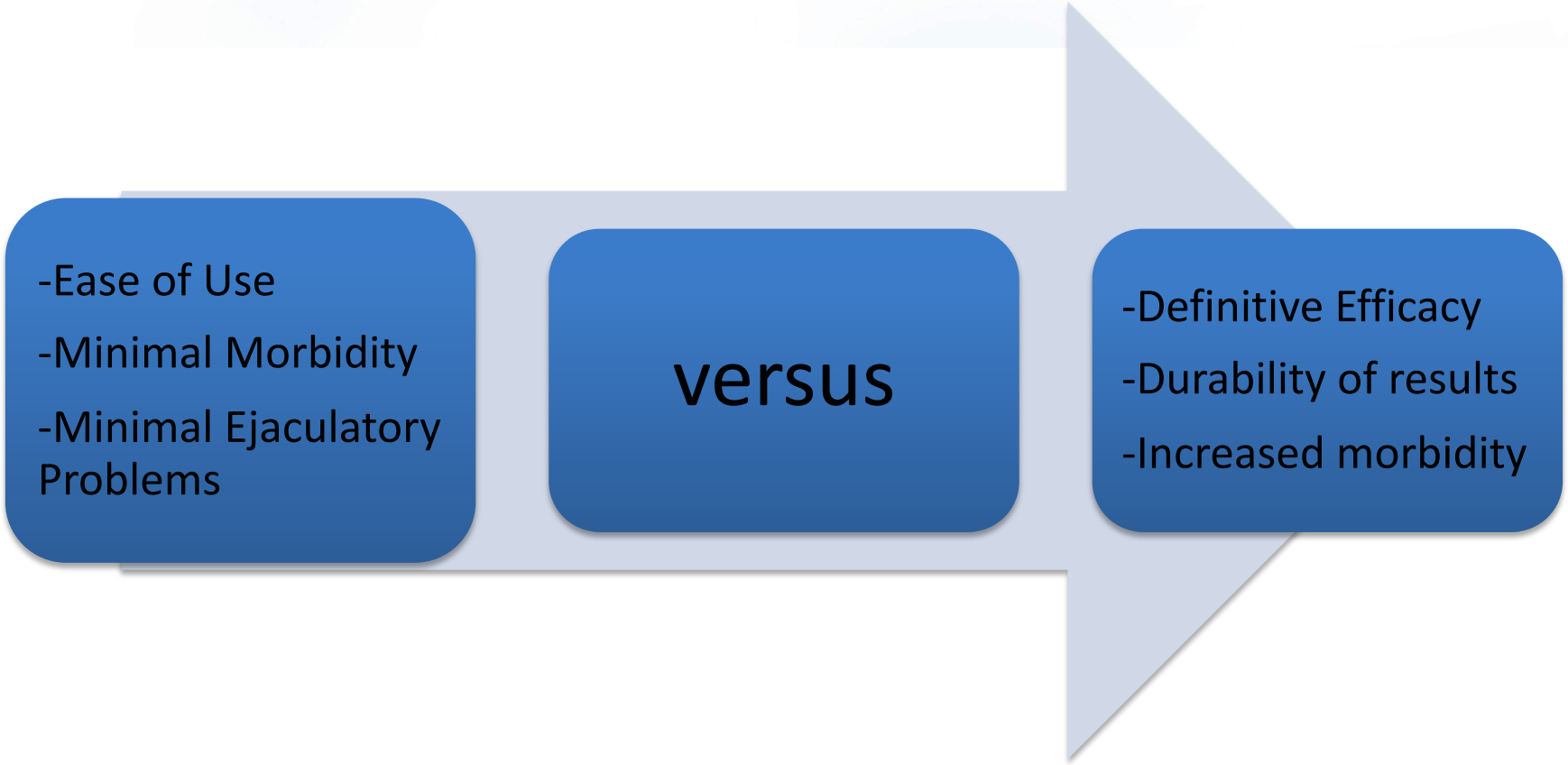
- Highlight differences between BPH procedures
- Review the data that underpins the guidelines
- Understand when each procedure might be useful
- THERE IS USUALLY MORE THAN ONE RIGHT ANSWER

BPH: MIST and Surgical Therapies



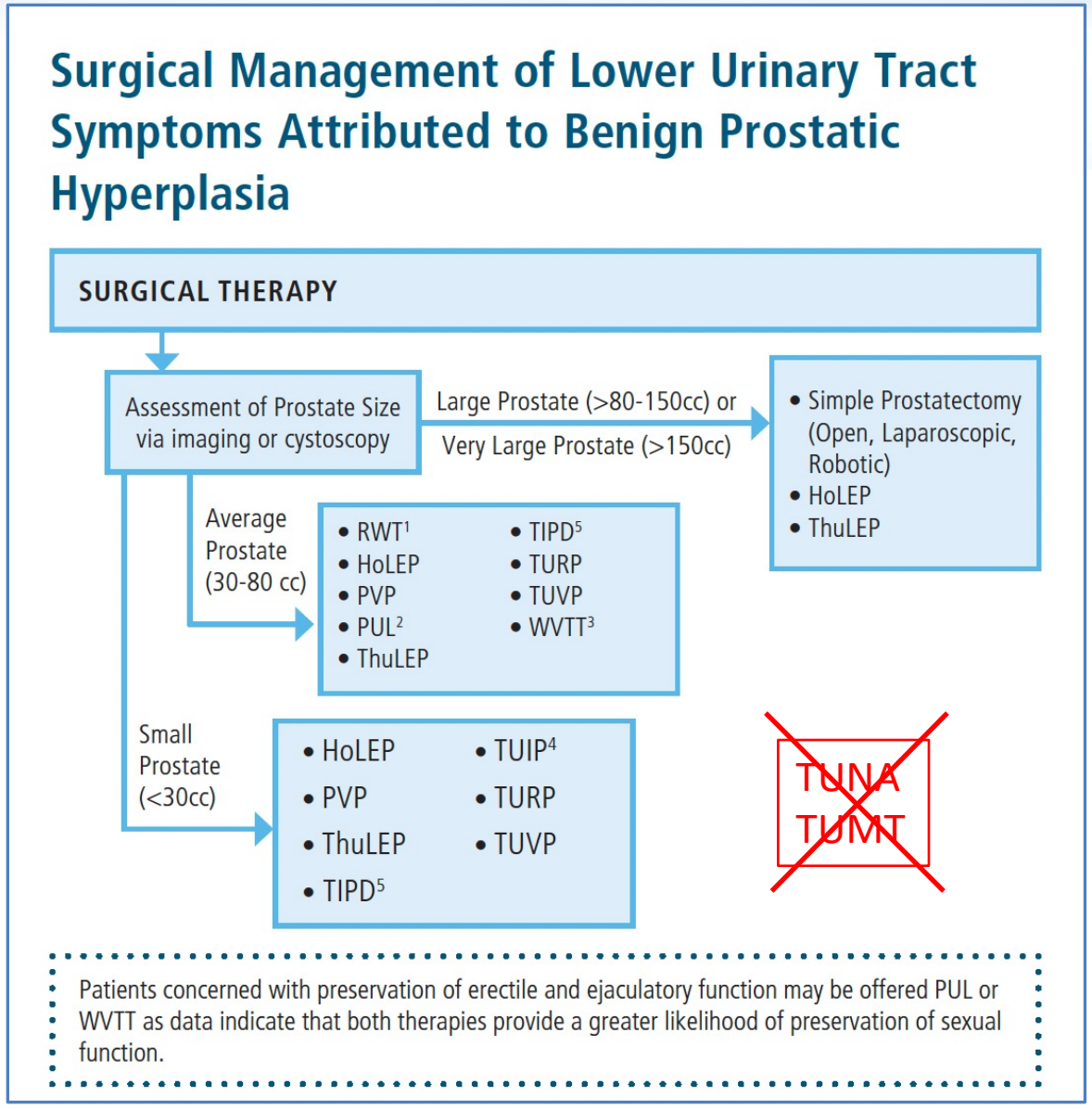
Invasiveness

BPH: MIST and Surgical Therapies



Invasiveness

AUA Guideline on Surgical Management of BPH 2023



RWT: Aquablation *PUL: Urolift*
WVTT: Rezum *TIPD: iTind*

MEDICALLY COMPLICATED PATIENTS

In patients who are at higher risk of bleeding, such as those on anticoagulation drugs, therapies with a lower need for blood transfusion, such as HoLEP, PVP, and ThuLEP, should be considered. For additional information on the use of anticoagulation and antiplatelet therapy in surgical patients, refer to the ICUD/AUA review on Anticoagulation and Antiplatelet Therapy in Urologic Practice.

Based on the evidence reports of the current guidelines, the following criteria are recommended when utilizing these approaches:

[1] RWT: prostate volume 30-80cc.

[2] PUL: absence of obstructing midline prostate tissue and prostate volume 30-80cc.

[3] WVTT: prostate volume 30-80cc.

[4] TUIP: prostate volume ≤30cc.

[5] TIPD: prostate volume 25-75cc and absence of obstructive middle lobe

Sandhu JS, Bixler BR, Dahm P, et al. J Urol 2023

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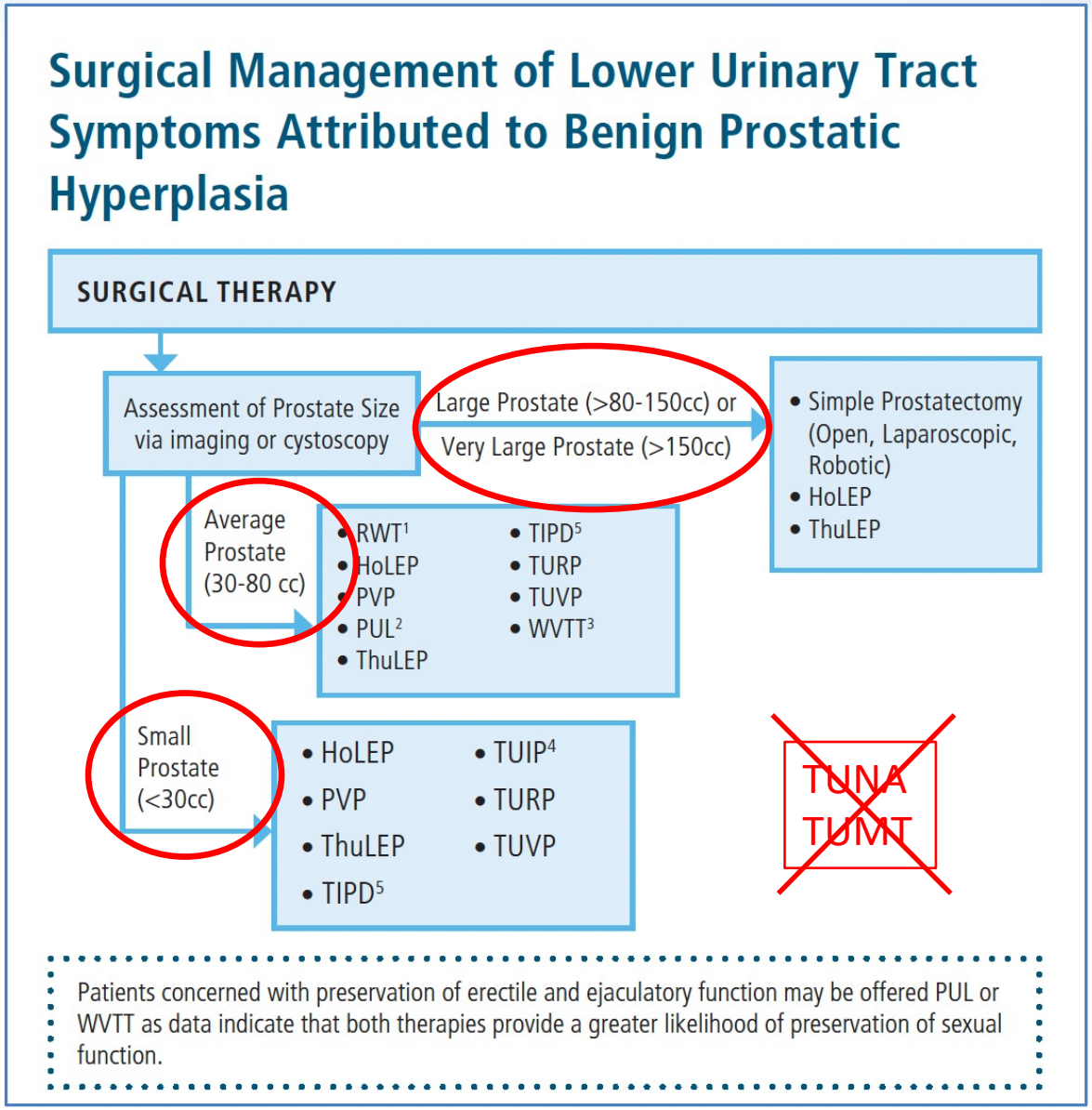
AUA Guideline on Surgical Management of BPH 2023



Sandhu JS, Bixler BR, Dahm P, et al. J Urol 2023

Considerations:

Size

Median lobe

Ejaculation Preferences

RWT: Aquablation *PUL: Urolift*

WVTT: Rezum *TIPD: iTind*

MEDICALLY COMPLICATED PATIENTS

In patients who are at higher risk of bleeding, such as those on anticoagulation drugs, therapies with a lower need for blood transfusion, such as HoLEP, PVP, and ThuLEP, should be considered. For additional information on the use of anticoagulation and antiplatelet therapy in surgical patients, refer to the ICUD/AUA review on Anticoagulation and Antiplatelet Therapy in Urologic Practice.

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[1] RWT: prostate volume 30-80cc.

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[4] TUIP: prostate volume ≤30cc.

[5] TIPD: prostate volume 25-75cc and absence of obstructive middle lobe

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What would you do?

60g prostate
Mild median lobe
Minimal traebeculations

70g prostate
Severe median lobe
Severe traebeculations

50g prostate
Right lateral lobe encroaching
Mild traebeculations

What is the patient most bothered by? What are their goals for treatment?

- Storage vs. Voiding Symptoms
  - May need medication for persistent urgency
- Patient factors
  - Comorbidities, bleeding risk, poor anesthesia candidate
- Patient preferences
  - No catheter
  - Ejaculatory function
  - Fast return to normal activity
  - Avoid postop symptoms

Prostatic Urethral Lift (Urolift)

- Permanent implants retract lateral lobes
- Rapid relief, minimal catheter need, preserve ejaculatory and erectile function

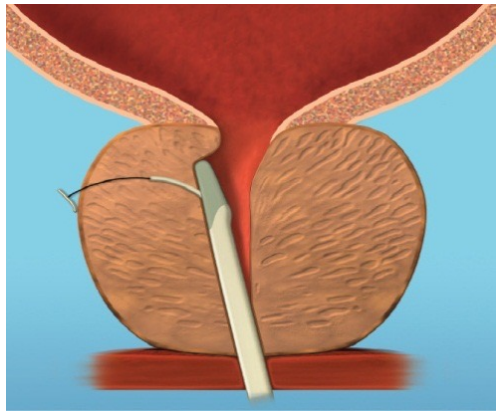
PROSTATIC URETHRAL LIFT (PUL)

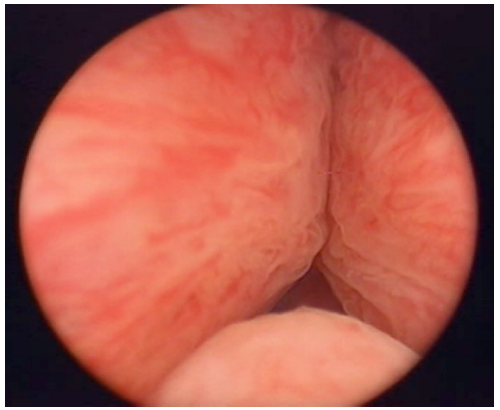
GUIDELINE STATEMENT 34

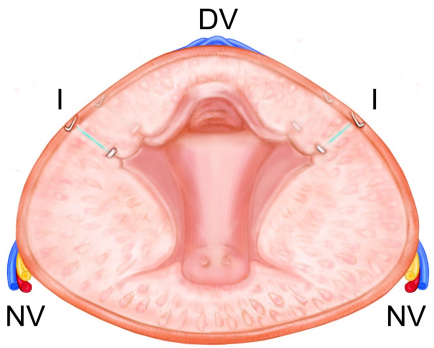
PUL should be considered as a treatment option for patients with LUTS/BPH provided prostate volume 30-80g and verified absence of an obstructive middle lobe. (*Moderate Recommendation; Evidence Level: Grade C*)

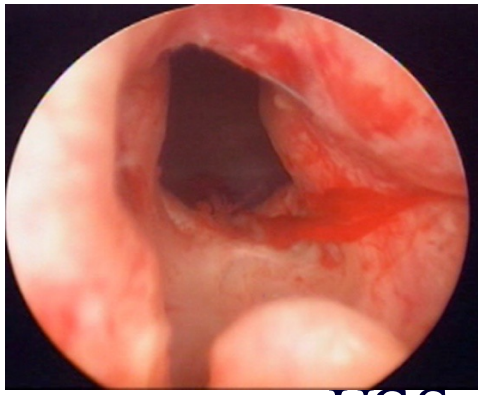
GUIDELINE STATEMENT 35

PUL may be offered as a treatment option to eligible patients who desire preservation of erectile and ejaculatory function. (*Conditional Recommendation; Evidence Level: Grade C*)









McVary KT et al. J Sex Med 2013

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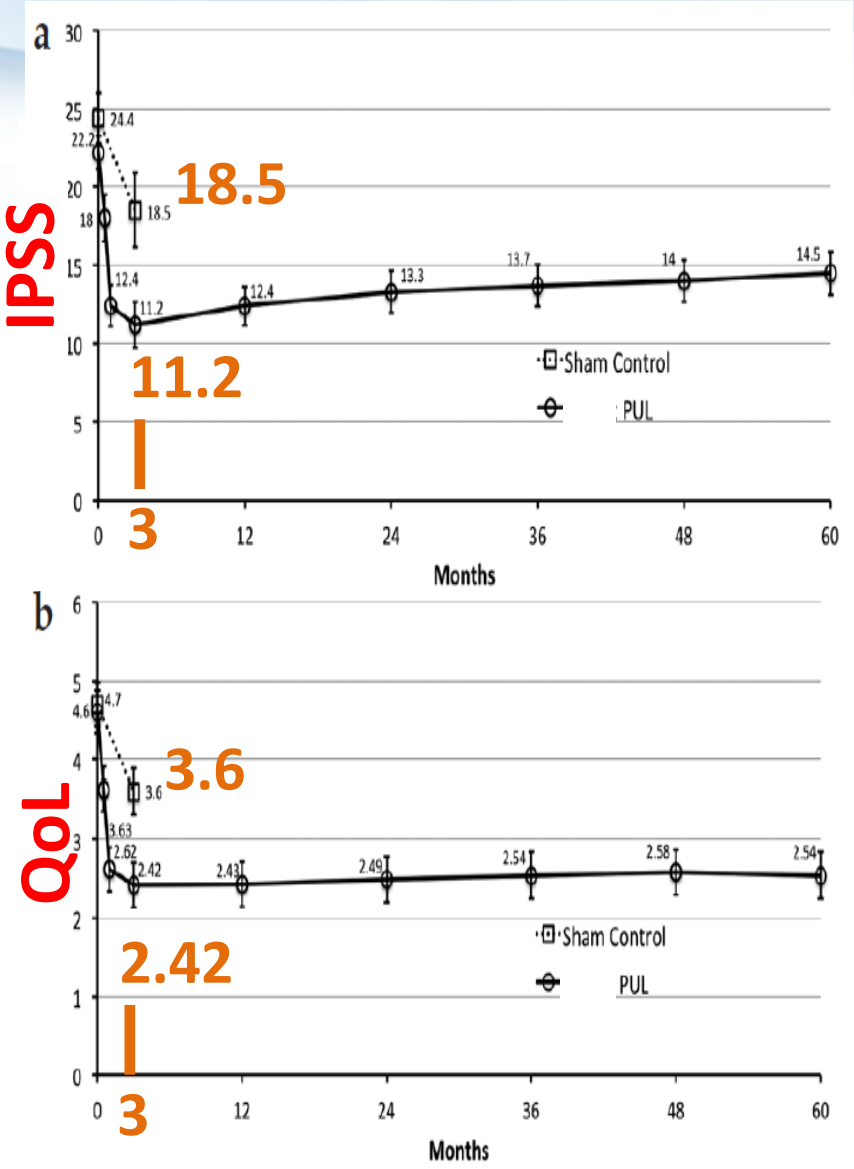
PUL: L.I.F.T. Study

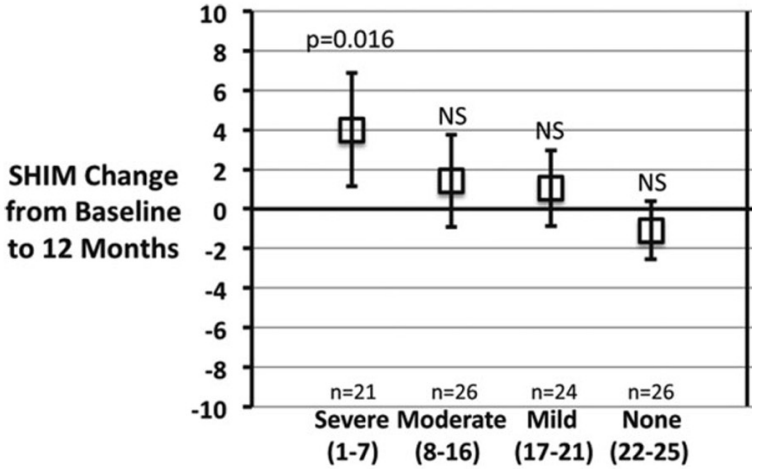
- 206 patients, 30-80g prostate, average 4.9 implants
- RCT (144 Urolift vs 66 SHAM)

  Excluded median lobe
- 32% failed void trial→catheter for avg 0.9 days
- Return to normal activity by 8.6 +-7.5 days
- 1 month: IPSS 22.3→12.3 (88% better than sham)



No new onset sustained sexual dysfunction (EjD or ED)

MSHQ-EjD bother and function stable up to 5 yrs



Roehrborn et al. L.I.F.T. Study. Can J Urol 2017.

McVary KT et al. J Sex Med 2014

PUL

Mild-mod adverse effects usually resolve within 2-3 weeks

No new onset sustained sexual dysfunction (EjD or ED)

5 yrs: 13.6% surgical retreatment, 10.7% use of BPH meds

May reduce quality of prostate MRIs for elevated PSA workup*

TABLE 1. **Adverse events over 5 year course of study**

Time period [months]	**0-3**	**4-12**
Total available subjects	140	139
Total subject-months (SM)	413.6	1210.3
Related adverse events [total events]	162	15
Related adverse events [subjects]	100	12
% SM with adverse event per total SM:		
Abdominal pain	0.3%	
Bladder spasm	0.3%	0.09%
Chills (rigors)		
Diarrhea	0.2%	
Dizziness	0.2%	
Fever (pyrexia)	0.06%	
Vomiting	0.02%	
Hypotension	0.04%	
Orchitis/epididymo-orchitis	0.3%	
Painful erection	0.2%	
Urinary retention	0.4%	
Urethral stenosis (stricture)	< 0.01%	< 0.01%
Prostatitis	0.4%	< 0.01%
Urinary tract infection	0.1%	0.03%
Pelvic pain	6%	1%
Hematuria	4%	0.2%
Dysuria	9%	1%
Urinary urge incontinence	3%	3%
Other	4%	3%

Prostate Cancer and Prostatic Diseases (2019) 22:411–419
https://doi.org/10.1038/s41391-018-0118-x

ARTICLE

Clinical Research

Prostatic Urethral Lift (PUL) for obstructive median lobes: 12 month results of the MedLift Study

Daniel Rukstalis[1] · Douglas Grier[2] · Sean P. Stroup[3] · Ronald Tutrone[4] · Euclid deSouza[5] · Sheldon Freedman[6] · Richard David[7] · Jed Kamientsky[8] · Gregg Eure[9]

Observational cohort study (45 pts)
Improved Qmax, IPSS, EjD function
Not in AUA Guidelines

Roehrborn C et al. L.I.F.T. Study. Can J Urol 2017.

Rukstalis D et al. Pros Cancer and Pros Dis 2019.

*Benidir T et al. JU Insight. J Urol 2023.

Water Vapor Thermal Therapy (Rezum)

- Convective water therapy→ablates prostate contained within the capsule

WATER VAPOR THERMAL THERAPY (WVTT)

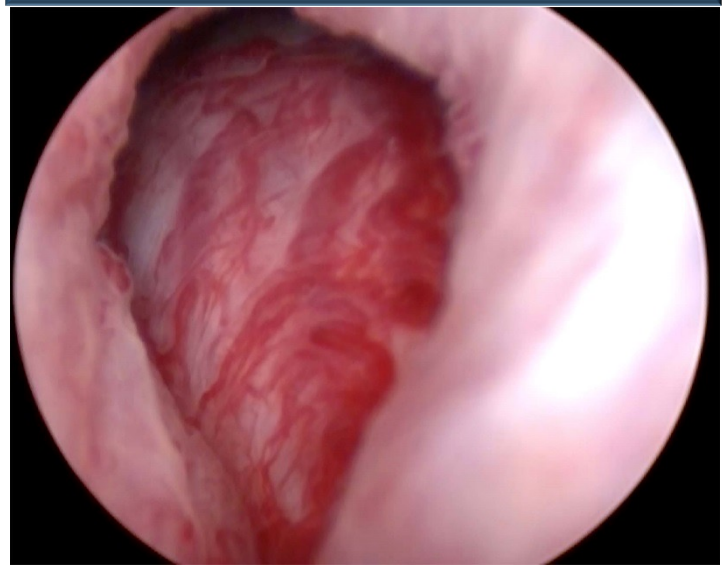
GUIDELINE STATEMENT 36

WVTT should be considered as a treatment option for patients with LUTS/BPH provided prostate volume 30-80g. (*Moderate Recommendation; Evidence Level: Grade C*)

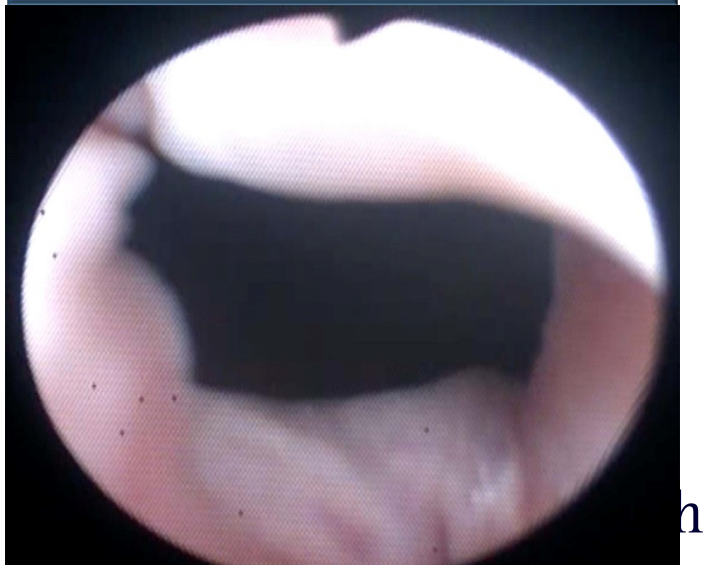
GUIDELINE STATEMENT 37

WVTT may be offered as a treatment option to eligible patients who desire preservation of erectile and ejaculatory function. (*Conditional Recommendation; Evidence Level: Grade C*)

Pre-Treatment

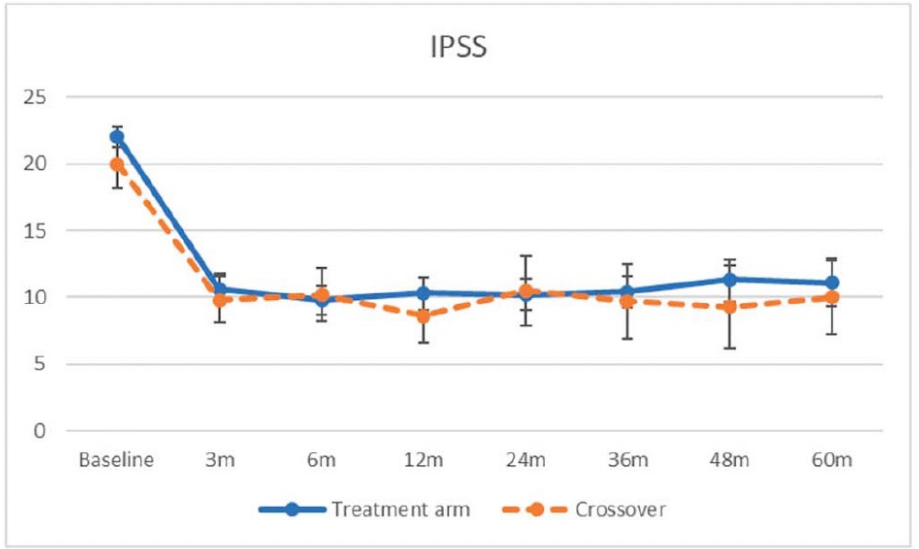


6-Month

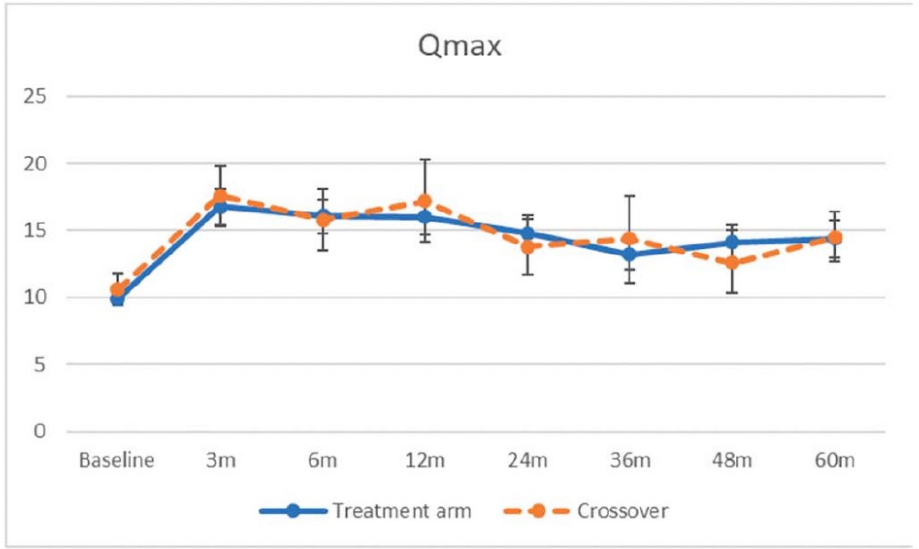


WVTT: Rezum Study

- 197 patients, 30-80g prostate size, 4.5 median injections
  - 31% had median lobe (additional 1.6 treatments)
- RCT (135 Rezum vs 61 SHAM)
- 90.4% required catheter for mean 3.4 days
- Return to normal activity by median 4 days
- Improvement as early as 2 weeks, maximum at 3-6 months



(A) IPSS



(C) Qmax

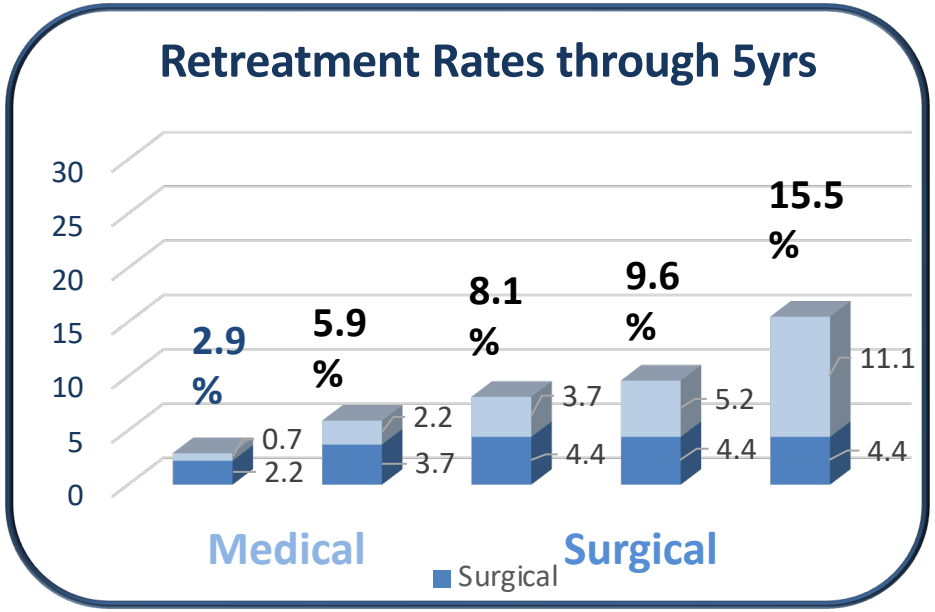
Table 4. *Changes in outcomes in thermal treatment group from baseline through 12 months*

	2 Wks	1 Mo	3 Mos	6 Mos	12 Mos
I-PSS:					
No. (paired values)	130	132	134	129	120
Mean ± SD baseline	21.9 ± 4.8	21.8 ± 4.7	22.0 ± 4.8	22.0 ± 4.8	21.8 ± 4.8
Mean ± SD followup	18.6 ± 7.1	14.5 ± 7.2	10.6 ± 6.4	9.8 ± 6.2	10.2 ± 6.6
Change ± SD	−3.2 ± 7.8	−7.4 ± 8.1	−11.3 ± 7.6	−12.2 ± 7.6	−11.7 ± 7.2
% Change (95% CI)	−12 (−18, −5)	−31 (−37, −25)	−50 (−55, −44)	−54 (−59, −49)	−53 (−58, −47
p Value	0.0006	<0.0001	<0.0001	<0.0001	<0.0001
Qmax:					
No. (paired values)		133	133	125	117
Mean ± SD baseline		9.9 ± 2.3	9.9 ± 2.3	9.9 ± 2.2	9.8 ± 2.2
Mean ± SD followup		13.1 ± 5.5	16.1 ± 7.3	15.4 ± 6.5	14.9 ± 6.8
Change ± SD		3.2 ± 5.2	6.2 ± 7.1	5.5 ± 6.3	5.1 ± 6.3
% Change (95% CI)		36 (26, 46)	67 (53, 80)	61 (48, 73)	54 (42, 66)
p Value		<0.0001	<0.0001	<0.0001	<0.0001

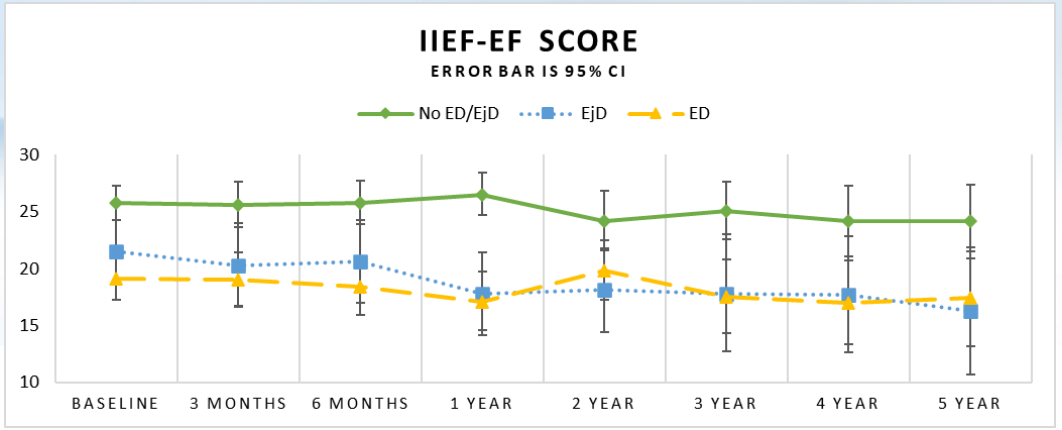
McVary KT, Roehrborn CG et al. J Urol 2016; J Urol 2017; J Urol 2020; J Urol 2021

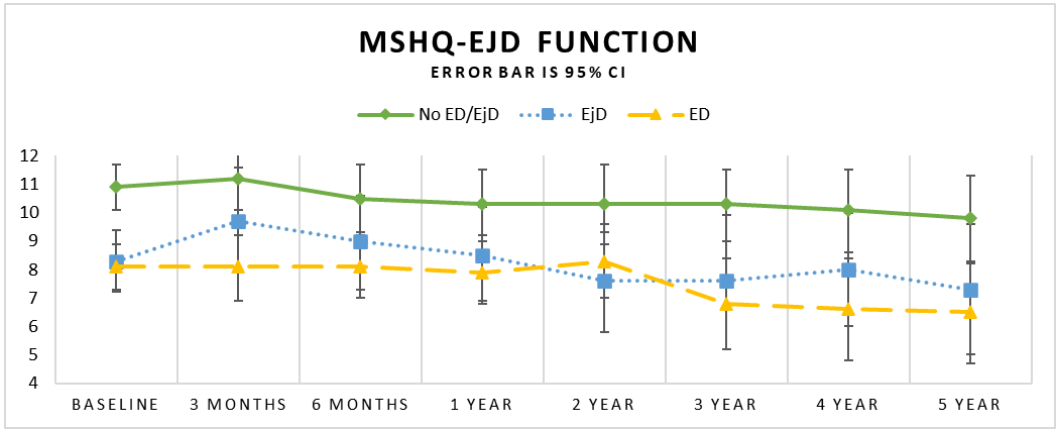
WVTT: Rezum Study

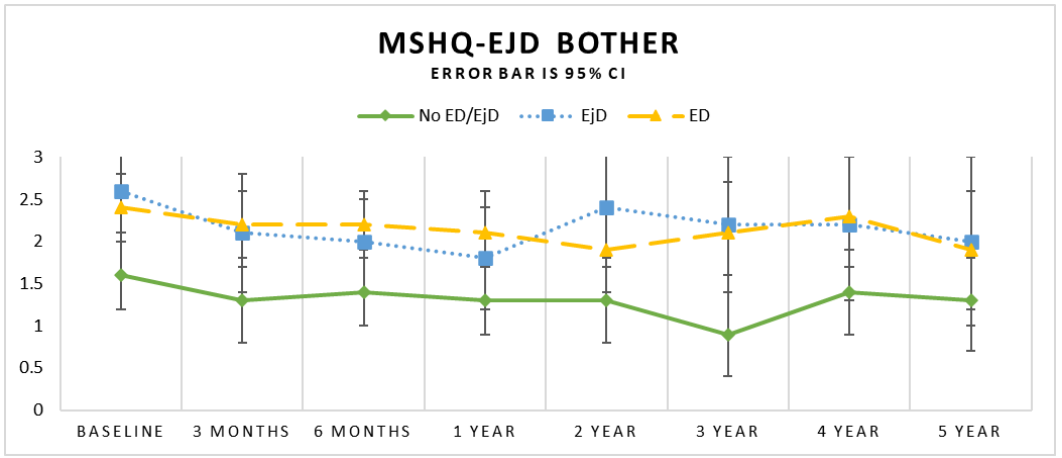
- Dysuria (17%), hematuria (12%), hematospermia (7%), urgency (6%), retention (4%), decreased Ej volume (3%), anejaculation (3%) resolve within 3 weeks
- After 3 months: Dysuria (0.7%), decreased Ej vol (1.5%)
- No impact on erectile or ejaculatory function



5 yrs:
4.4% surgical retreatment
11.1% BPH meds







McVary KT, Roehrborn CG et al. Sex Medicine 2021.

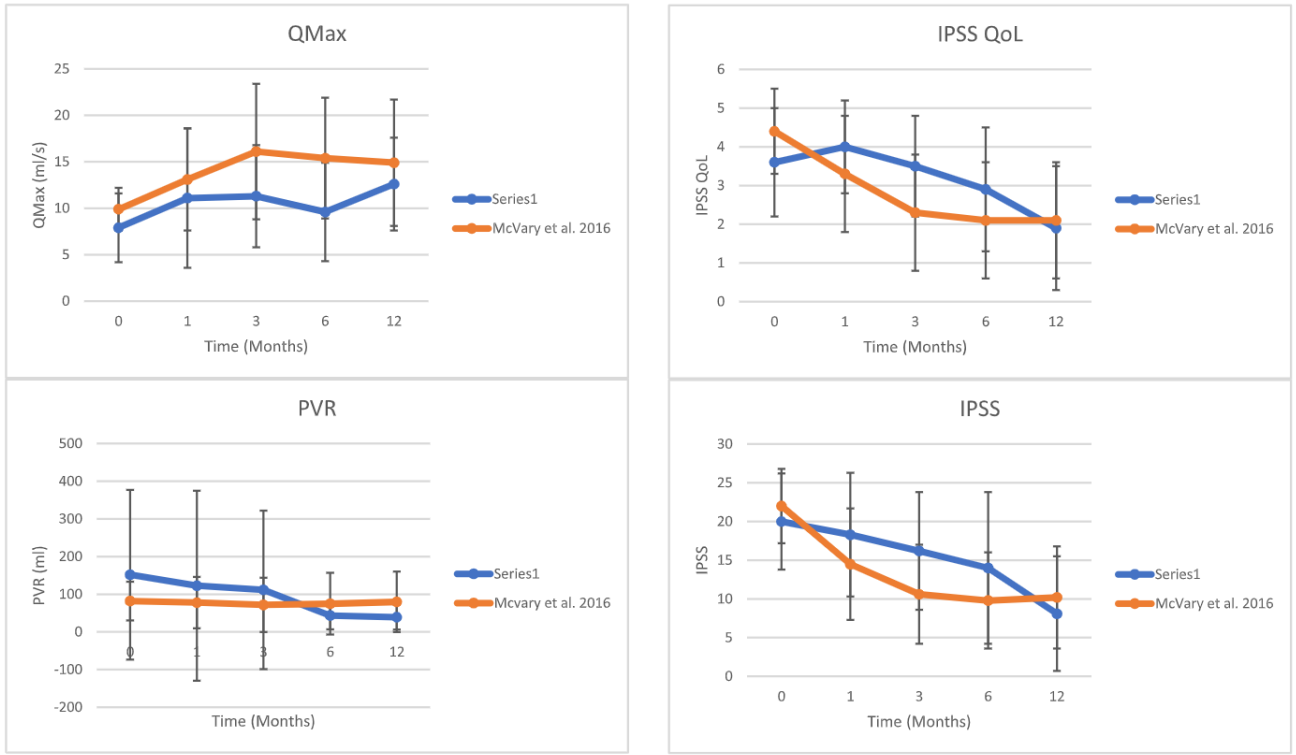
Prostatic Diseases and Male Voiding Dysfunction

Pilot Study of "Less is More" Rezum for Treatment of BPH

Oluwatobi Aladesuru, Koby Amankwah, Dean Elterman, Kevin C. Zorn, Naeem Bhojani, Alexis Te, and Bilal Chughtai

UROLOGY 165: 256–260, 2022.

- 1 treatment per lobe is comparable to standard therapy
- May take longer to achieve maximum results, but less irritation along the way
- 12.5% vs 43.4% AEs



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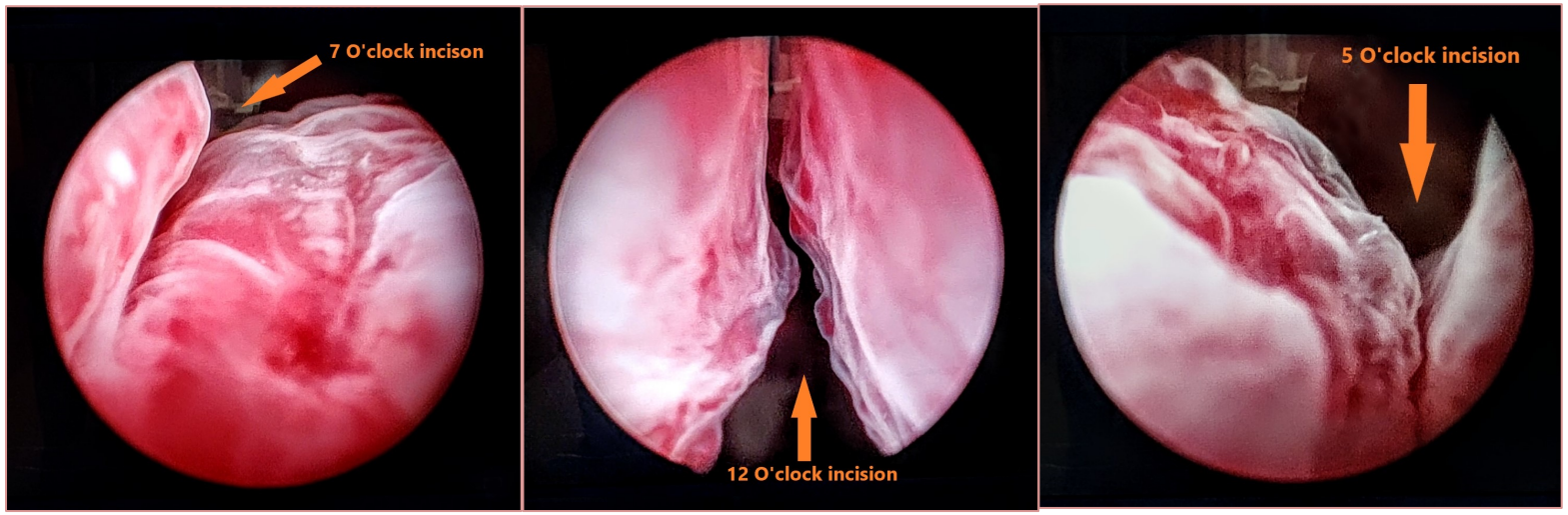
Temporarily Implanted Prostatic Devices (iTind)

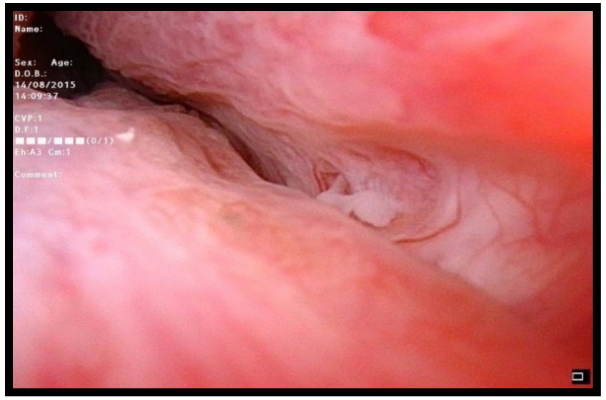
- Deep, bloodless incisions created through ischemic pressure and subsequent necrosis→permanently remodel the prostatic urethra and bladder neck

> TEMPORARY IMPLANTED PROSTATIC DEVICES (TIPD)
>
> GUIDELINE STATEMENT 41
>
> **TIPD may be offered as a treatment option for patients with LUTS/BPH provided prostate volume is between 25 and 75g and lack of obstructive median lobe. (*Expert Opinion*)**

Ischemic incisions immediately after device removal



12 months after removal



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TIPD: iTind

- 185 patients, 25-75g prostate size
- RCT (118 iTIND vs 57 SHAM)

  Excluded median lobe, PVR>250, Qmax>12, IPSS<10
- 78.6% vs 60% IPSS improvement @3 mos (21.6→12.7)
- Qmax improved @12 mos (8.4→11.9 ml/s)
- No change in IIEF or SHIM @12 mos

Prostatic Diseases and Male Voiding Dysfunction

The iTind Temporarily Implanted Nitinol Device for the Treatment of Lower Urinary Tract Symptoms Secondary to Benign Prostatic Hyperplasia: A Multicenter, Randomized, Controlled Trial

Bilal Chughtai*, Dean Elterman*, Neal Shore, Marc Gittleman, Jay Motola, Sheldon Pike, Craig Hermann, William Terrens, Alfred Kohan, Ricardo R. Gonzalez, Aaron Katz, Jeffery Schiff, Evan Goldfischer, Ivan Grunberger, Le Mai Tu, Mark N. Alshak, and Jed Kaminetzky

- Sustained at 4 years
  - (nonRCT)

No sexual or ejaculatory dysfunction, regardless of age, prostate size, or baseline ED status

Table 3. Overview of adjudicated adverse events

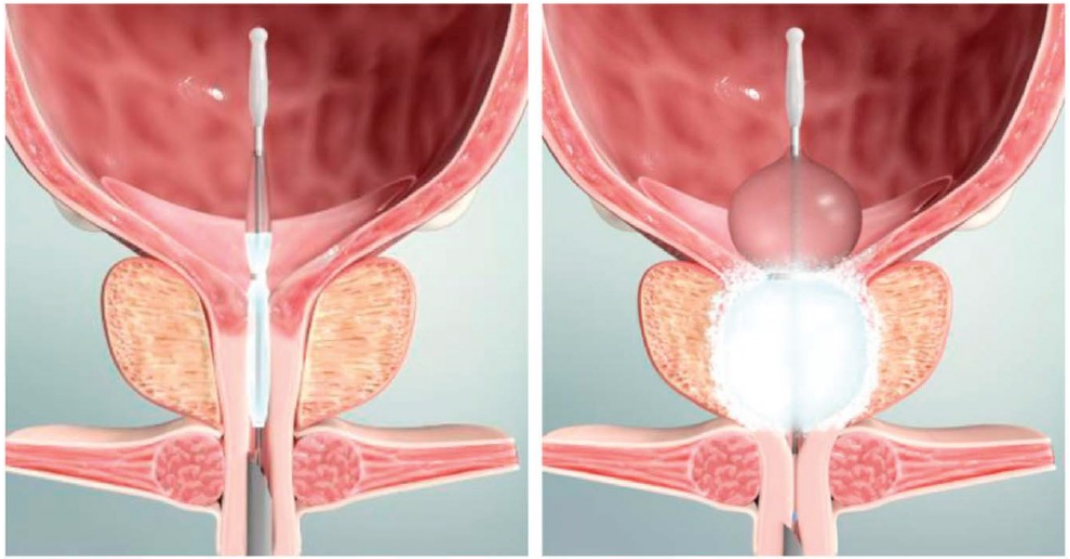
	iTind Group 0-30 days			Sham Group 0-30 days			iTind Group 1-3 months			iTind Group 3-12 months		
	Events (n)	Subjects (n)	Subjects (%)	Events (n)	Subjects (n)	Subjects (%)	Events (n)	Subjects (n)	Subjects (%)	Events (n)	Subjects (n)	Subjects (%)
Serious AEs	16	10	7.8	2	2	3.5						
Related serious	5	3	2.3									
All AEs	109	45	38.1	19	10	17.5						
Related AEs	81	39	33.1	4	4	7	2	2	1.6	1	1	0.8
Dysuria		27	22.9		5	8.8						
Hematuria		16	13.6									
Micturition urgency		6	5.1		1	1.8						
Pollakiuria		8	6.8		1	1.8						
Urinary retention		7	5.9				1	1	0.8			
Urinary tract infection		2	1.7				1	1	0.8		1	0.8
Sepsis		1	0.8									
Pain		1	0.8									

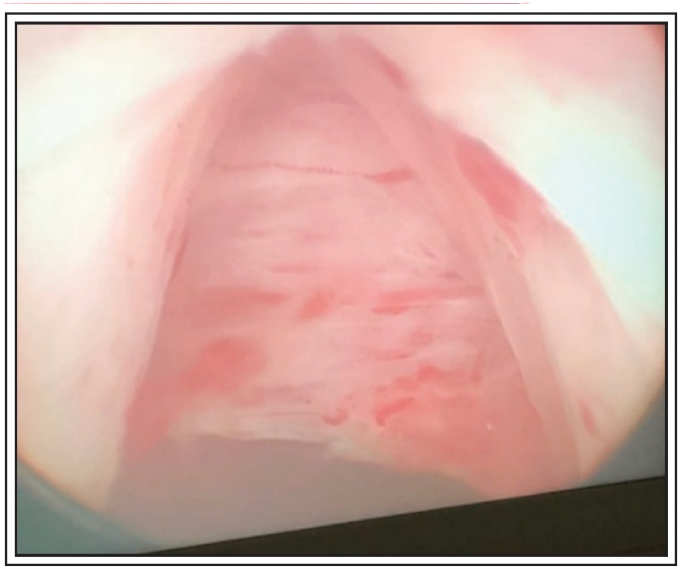
Amparore D et al. Minerva Urology and Nephrology 2023 *Chughtai B et al. Urology 2021.* *Chughtai B et al. J Urol 2021.*

Drug eluting catheters (Optilume)—NOT IN GUIDELINES YET

- Mechanical dilation→anterior commissurotomy
- Paclitaxel delivery→maintain luminal patency during healing

It is the hope of this Panel that further robust data will be available in the peer reviewed literature on these therapies to allow incorporation into future iterations of this Guideline.





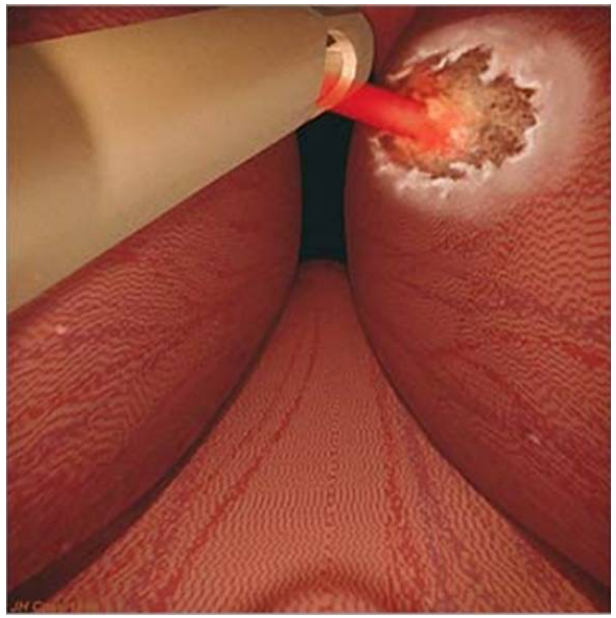
Photoselective Vaporization of the Prostate

- 532nm greenlight laser
- Tissue ablation/vaporization with a thin layer of underlying coagulation

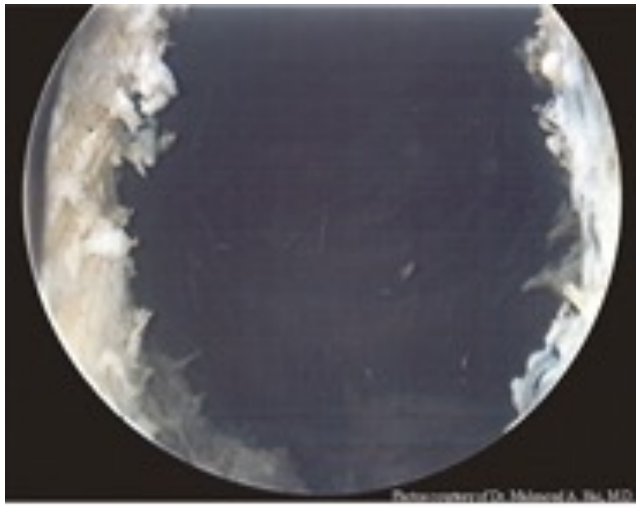
PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE (PVP)

GUIDELINE STATEMENT 33

PVP should be offered as an option using 120W or 180W platforms for the treatment of LUTS/BPH. (*Moderate Recommendation; Evidence Level: Grade B*)



Pre-PVP Procedure



Immediate Post PVP

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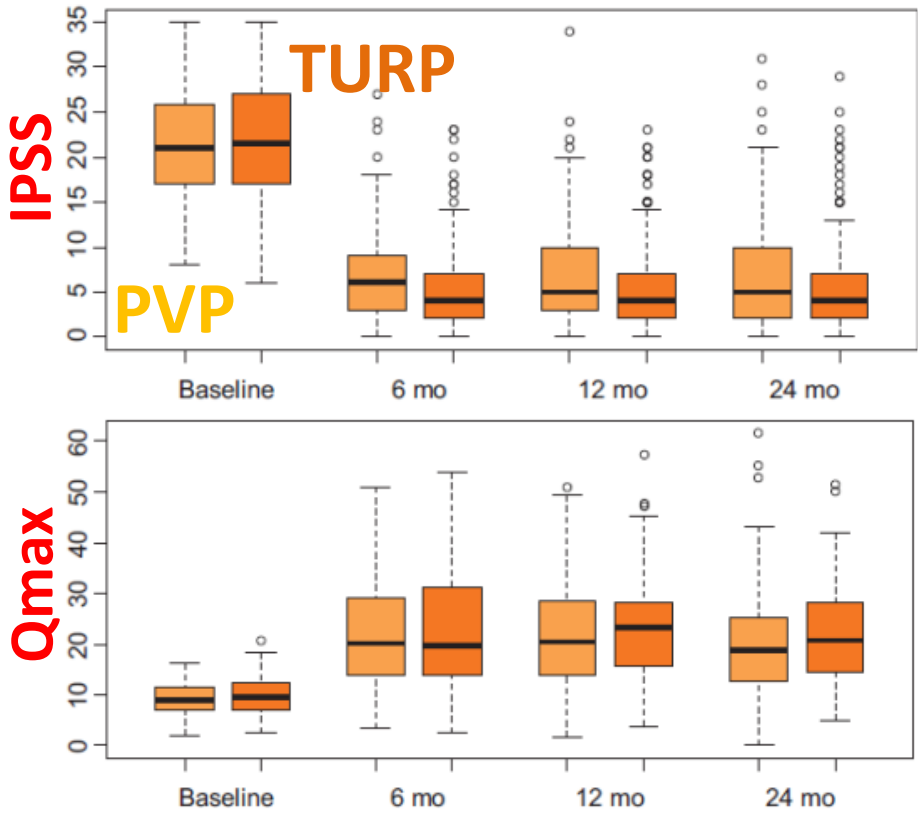
PVP: At least as good as TURP

- GOLIATH: PVP is noninferior to TURP at 2 yrs
  - 269 patients, 46g avg prostate size



World Journal of Urology (2021) 39:4389–4395
https://doi.org/10.1007/s00345-021-03688-4

ORIGINAL ARTICLE

Global Greenlight Group: largest international Greenlight experience for benign prostatic hyperplasia to assess efficacy and safety

Kyle W. Law[1] · Côme Tholomier[2] · David-Dan Nguyen[1] · Iman Sadri[1] · Félix Couture[3] · Ahmed S. Zakaria[4] · David Bouhadana[1] · Franck Bruyère[5] · Hannes Cash[6,7,8] · Maximilian Reimann[6] · Luca Cindolo[9] · Giovanni Ferrari[9] · Carlos Vasquez-Lastra[10] · Tiago J. Borelli-Bovo[11] · Edgardo F. Becher[12] · Vincent Misrai[13] · Dean Elterman[14] · Naeem Bhojani[4] · Kevin C. Zorn[4]

- 2011-2019, 3,627 patients
- Mean 64g, IPSS 22
- 60 months follow up
- 2.8% LUTS @6mos
- 0.7% Incontinence @6mos
- 1.5% Retreatment @5yrs

- **I QUOTE <10% @10 yrs**

Complication	Clavien–Dindo grade	Number of patients (%)
Perioperative		
Prostatic capsule perforation	IIIa	21 (1.4%)
Conversion to TURP	IIIa	47 (2.8%)
Early postoperative (< 30 days)		
30-day readmission	–	192 (13.3%)
# On anti-coagulants	–	58 (30%)
Fever	I	62 (4.0%)
UTI	I	118 (5.3%)
LUTS*	I	500 (22.6%)
OAB	I	6 (1.1%)
Incontinence	I	232 (10.5%)
Retention	I	164 (7.4%)
Hematuria	I	219 (9.9%)
Paraphimosis	I	1 (0.2%)
Hematuria	II	32 (4.3%)
Osteitis pubis	II	1 (0.2%)
Urosepsis	II	8 (0.5%)
Stenosis (urethra, meatus, bladder neck)	IIIb	1 (0.1%)
Arrhythmia	IVa	6 (0.4%)
Major cardiac event**	IVb	12 (0.8%)
Respiratory distress (desaturation)	IVb	3 (0.2%)
Death	V	4 (0.3%)
Long term at 5-year follow-up		
Bladder neck contracture	IIIb	11 (1.93%)
Urethral stricture	IIIb	5 (0.89%)
BPH recurrence requiring medical reintervention	II	19 (3.34%)
BPH recurrence requiring surgical reintervention	IIIb	10 (1.5%)

Bachmann A et al. GOLIATH Study. Eur Urol 2014. Law KW, Zorn KC et al. World J Urol 2021.

Holmium Laser Enucleation of the Prostate (HoLEP)

- The only size independent procedure for BPH
- Consider for patients at increased risk of bleeding

LASER ENUCLEATION

GUIDELINE STATEMENT 38

Holmium laser enucleation of the prostate (HoLEP) or thulium laser enucleation of the prostate (ThuLEP) should be considered as an option, depending on the clinician's expertise with these techniques, as prostate size-independent options for the treatment of LUTS/BPH. (*Moderate Recommendation; Evidence Level: Grade B*)

The HoLEP surgery "hollowing out" process

Developed by: Northwestern Memorial Hospital Department of Urology ©June 2022 Northwestern Memorial HealthCare 900427 (6/22) Holmium Laser Enucleation of the Prostate Surgery

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HoLEP

- Pros:
  - Lowest reoperation rate 1.4% (0-4% @7 years) [1][2]
  - No effect on erectile function at 3 yrs [3]
- Downsides:
  - Retrograde ejaculation (92.5% of patients) [4]
  - Transient urinary leakage (15% at 1 month, 3% > 6 months) [5]
  - Learning curve – need 50 cases [6]

1. Elkoushy MA et al J Endourol. 2015
2. Gilling PJ et al. European Urol 2008
3. Klett DE et al. Urology 2014
4. Gild P et al. Andrology 2020
5. Hout M et al. World Journal of Urology 2022
6. Shah HN et al. J Urology 2007

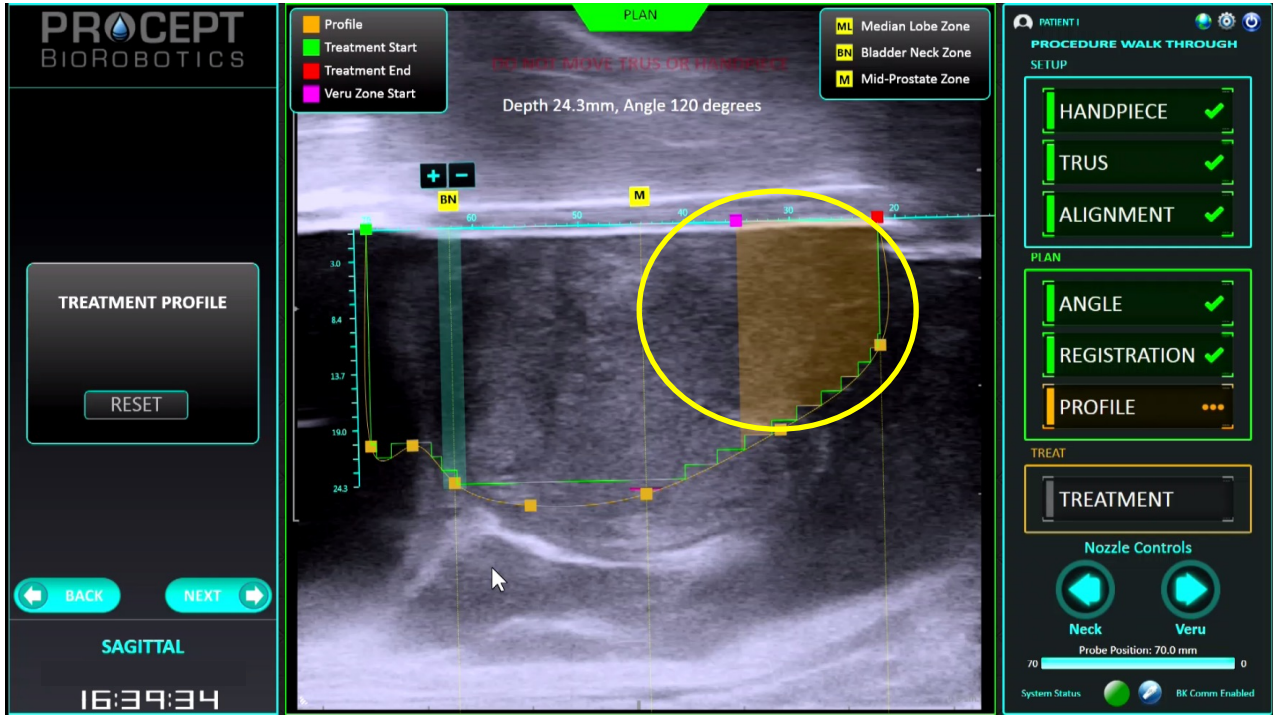
Robotic Waterjet Treatment (Aquablation)

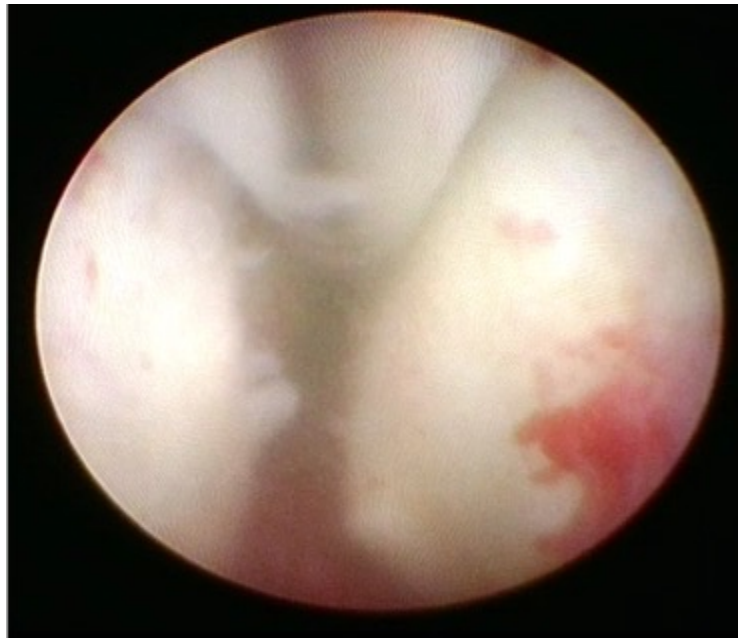
- Ultrasound guided water jet resects tissue, then TURP for hemostasis

ROBOTIC WATERJET TREATMENT (RWT)

GUIDELINE STATEMENT 39

Robotic waterjet treatment (RWT) may be offered as a treatment option to patients with LUTS/BPH provided prostate volume 30-80g. (*Conditional Recommendation; Evidence Level: Grade C*)





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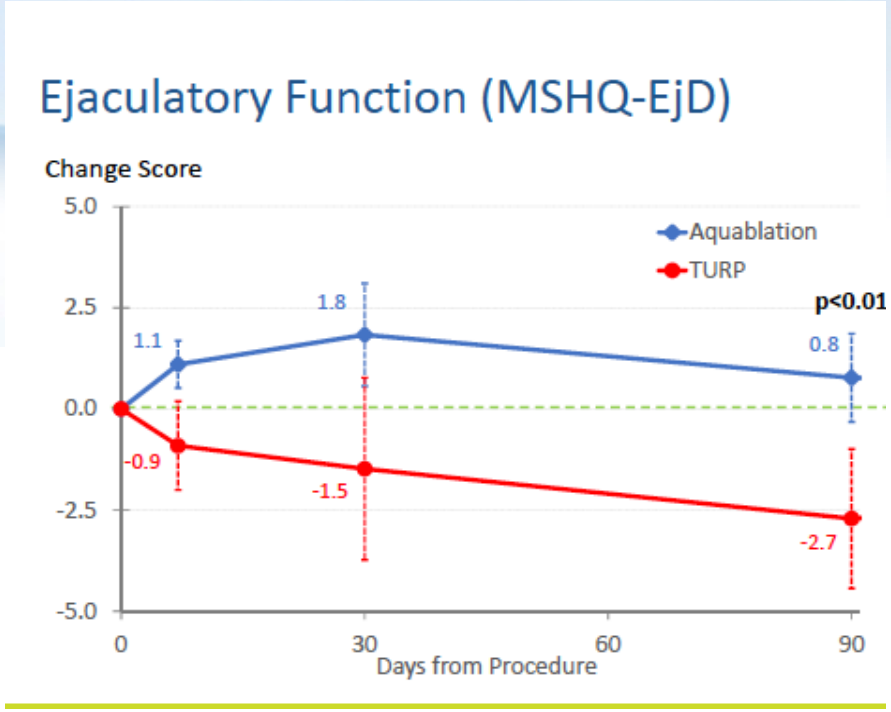
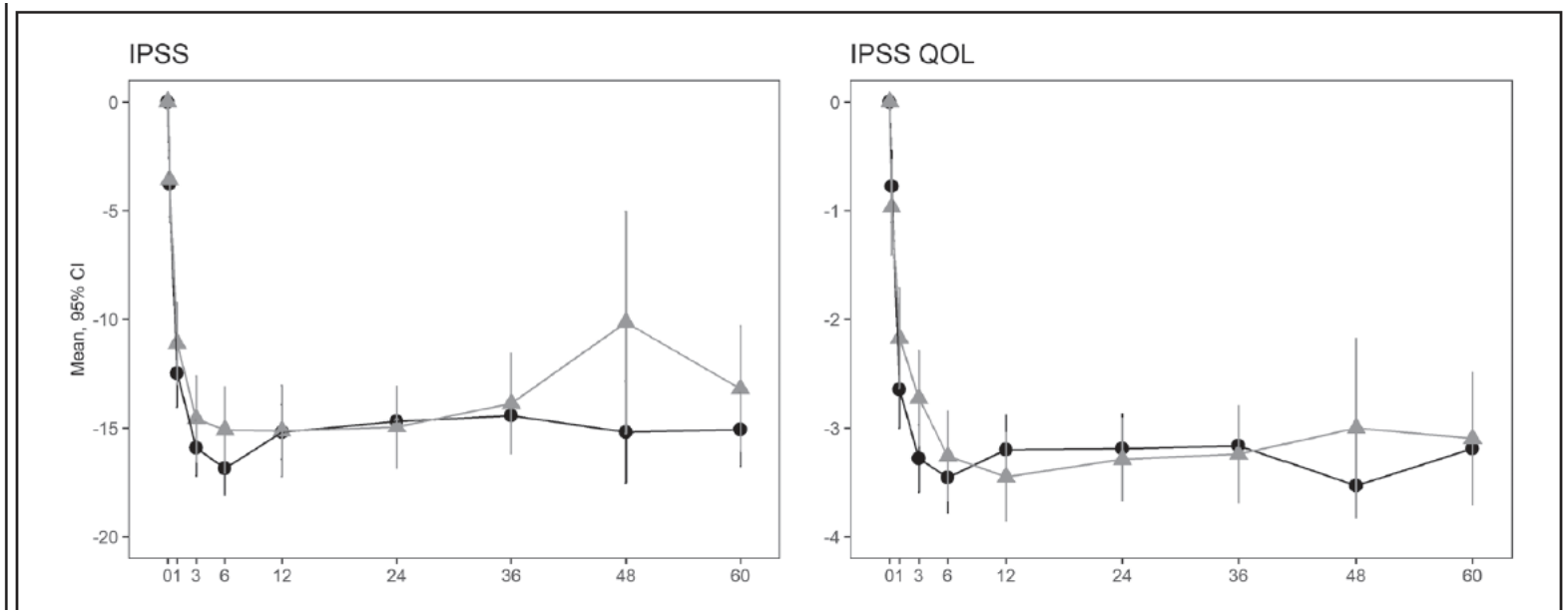
RWT: Water Study

- 181 patients, 30-80g prostate size
  - 50% had median lobe
- RCT (116 Aquablation vs 65 TURP)
- 10% vs 36% anejaculation @3yrs
- 6% retreatment @5 yrs (12% TURP)





Gilling PJ, Roehrborn CG et al. Canadian J Urol 2022; Gilling PJ, Roehrborn CG et al. J Urol 2018

My Practice: How I Counsel Patients

- Review the data together: bladder health, prostate size, etc.
  - Review cystoscopy
  - Uroflow
- Shared decision making – manage patient expectations
  - "I want you to have the best result and recovery possible so let's make sure you understand your choices and what will happen."
- Anticipate recovery pathways and postop hurdles
  - Postop LUTS, catheter, etc.

My Practice: How I Counsel Patients for 30-80g Prostates

Quick return to normal activity?	WVTT, PUL, TIPD
No catheter?	PUL, TIPD
Preserve ejaculation?	WVTT, PUL, TIPD, RWT
Large median lobe?	PVP, TURP, HoLEP
Lower retreatment rates?	HoLEP, WVTT, PVP*
Avoid postop LUTS?	PUL, WVTT* (1-injection technique)
Multiple comorbidities?	PUL, WVTT, TIPD
Increased bleeding risk?	WVTT, PVP, HoLEP
Avoid general anesthesia?	WVTT, PUL, TIPD

Thank you!

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