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LUTS in the modern era

Dr Jon Rees
Tyntesfield Medical Group

In the past…!

- Man with urinary symptoms = PROSTATISM
- Prostatism = TURP
- TURP unsuccessful = REDO TURP
- Redo TURP unsuccessful = can’t help you!

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The present….

- Vast majority managed in primary care
- Medical management dominates:
  - 24% watchful waiting
  - 73% medical management
  - 3% surgery
- Referral to secondary care only for men with treatment failure (poor efficacy / tolerability)
- Organ based diagnosis – ‘BPH’, ‘OAB’ etc

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The Future….

"Computers in the future may weigh no more than 1.5 tons"

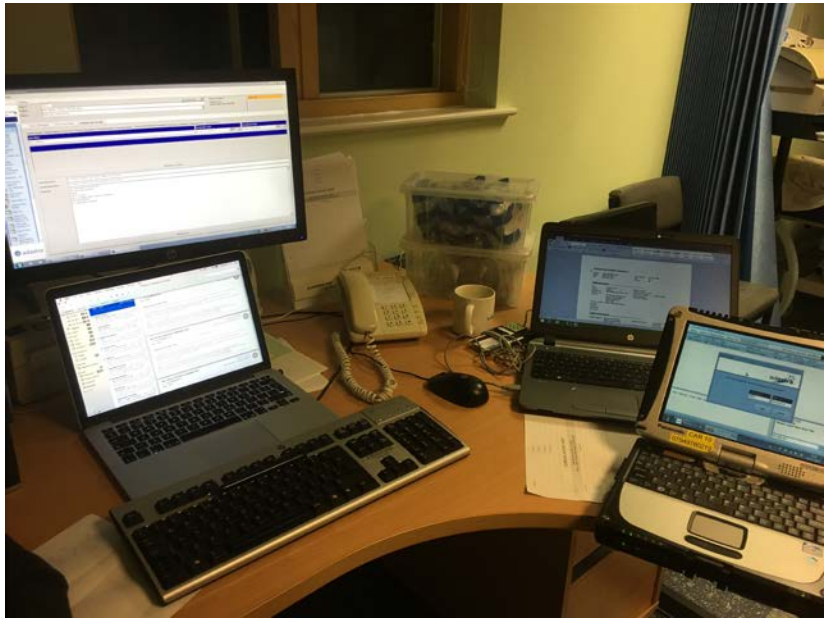
Popular Mechanics, 1949

"I think there is a world market for maybe 5 computers"

Thomas Watson, Chairman of IBM, 1943

"There is no reason for any individual to have a computer in his home"

Ken Olson, President, Digital Equipment Corporation, 1977



ASSESSMENT OF LUTS

Assessment

- Urinalysis
- Frequency Volume Chart
- Uroflowmetry including Post-void residual
- PSA

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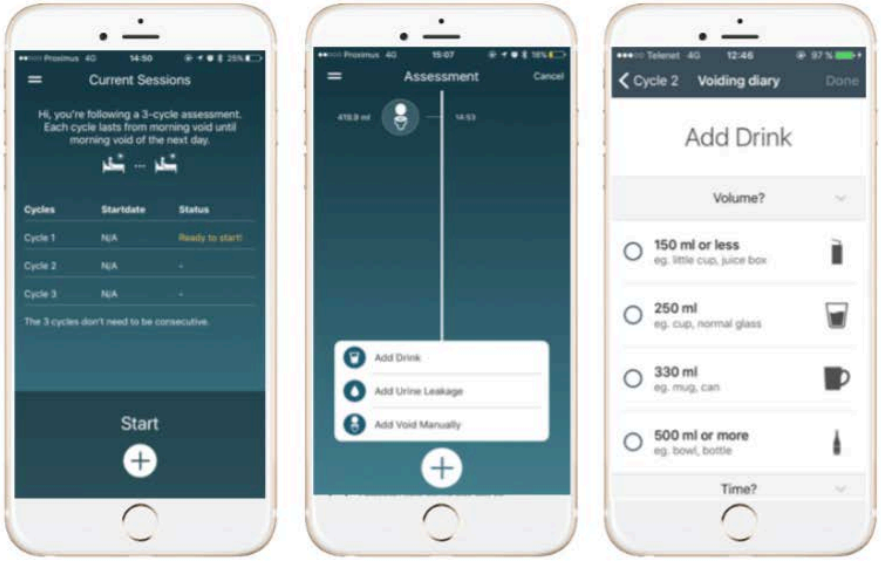
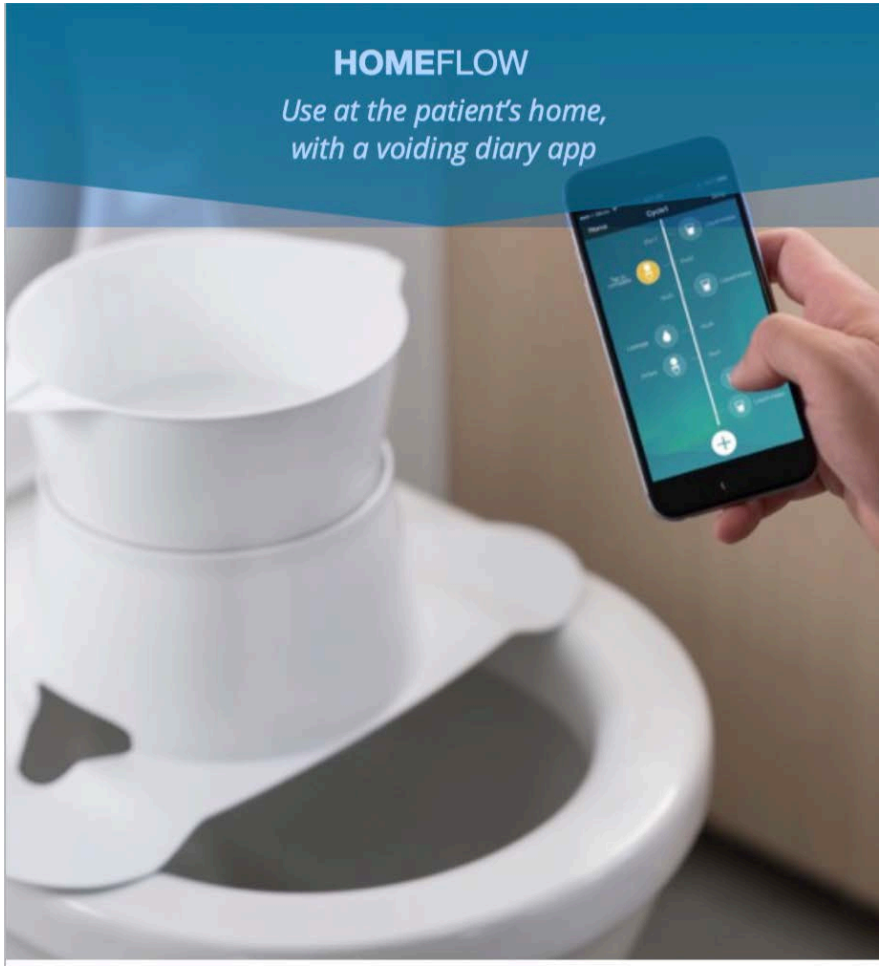
Becel
Becel
light


holy
water

Uroflowmetry and voiding diary



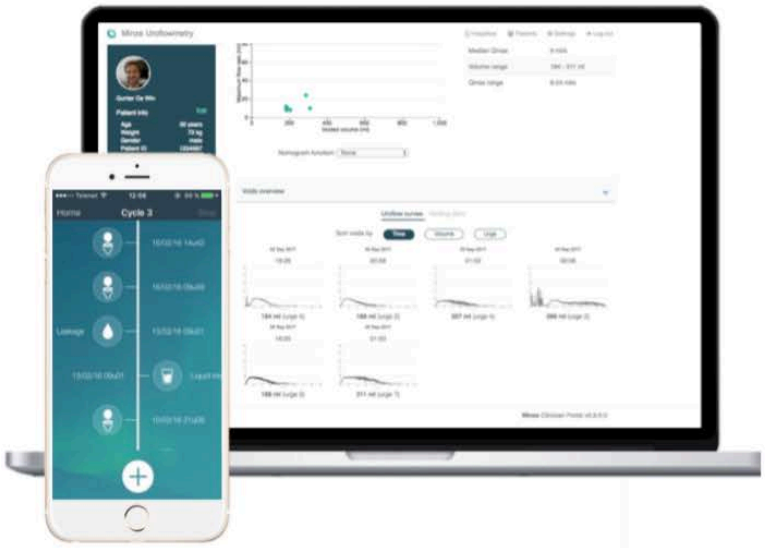


- The physcian can decide that a patient needs to keep a complete voiding diary for in total 3 days. Voids, liquid intake and leakage episodes need to be registered.
- The uroflowmeter registers volume, time and flow automatically and the patient is prompted in the app to complete questions related to the void such as type and urge.
- A void can be added manually when the patient has no access to the uroflowmeter
- Liquid intake and leakage episodes can be added manually

UROFLOWMETER CONNECTED TO SOFTWARE FOR PATIENTS AND CLINICIANS

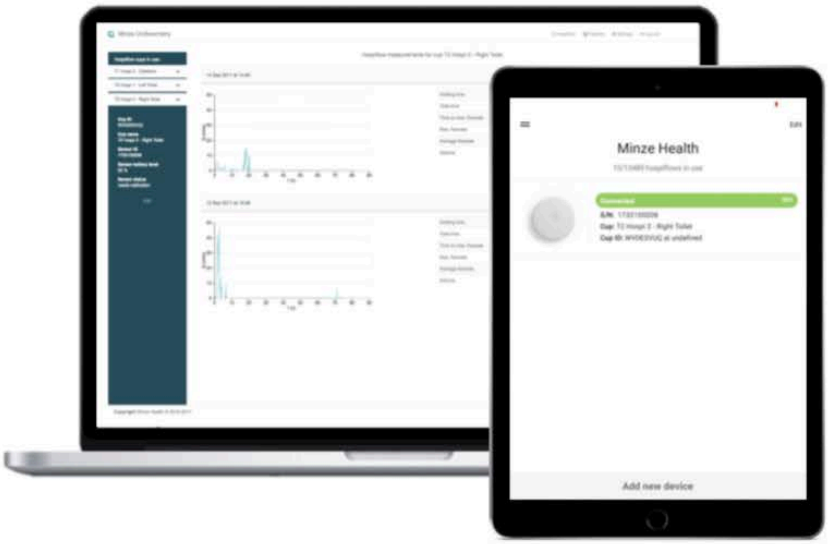
Minze
health at home

HOMEFLOW
Clinician platform



Patient
voiding-diary app

HOSPIFLOW
Clinician platform



clinician device-
management app

Bluetooth connected uroflowmeter


100% 22:23
Quick ID
END EXAM
MI
0.6
TIS
0.1
Frame Rate
30 Hz
Gain
57
Depth
18.0 cm
Transducer
S4-1
Preset
FAST
Power
-0.3 dB
18cm
Fast Flow
MMode
Depth
Gain
Slow Flow
Save Loop
PHILIPS
Lumify

Welcome to the QRISK®2-2015 risk calculator: http://qrisk.org

This calculator is only valid if you do not already have a diagnosis.

Reset | Information | Publications | About | Copyright | Contact Us | Algorithm | Software

About you

Age (25-84): 63

Sex: (•) Male ( ) Female

Ethnicity: White or not stated

UK postcode: leave blank if unknown

Postcode: BS48 1BZ

Clinical information

Smoking status: light smoker (less than 10)

Diabetes status: none

Angina or heart attack in a 1st degree relative < 60? [ ]

Chronic kidney disease? [x]

Atrial fibrillation? [ ]

On blood pressure treatment? [ ]

Rheumatoid arthritis? [ ]

Leave blank if unknown

Cholesterol/HDL ratio: 5.1

Systolic blood pressure (mmHg): 165

Body mass index

Height (cm): 180

Weight (kg): 90

Calculate risk over 10 years.

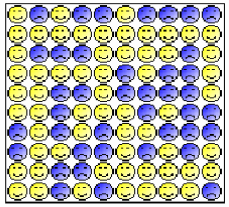
Calculate risk

Your results

Your risk of having a heart attack or stroke within the next 10 years is:

40%

In other words, in a crowd of 100 people with the same risk factors as you, 40 are likely to have a heart attack or stroke within the next 10 years.



Risk of heart attack or stroke

Your score has been calculated using the data you entered.

Your body mass index was calculated as 27.78 kg/m^2.

How does your 10-year score compare?

Your score

Your 10-year QRISK®2 score	40%
The score of a healthy person with the same age, sex, and ethnicity*	11.7%
Relative risk**	3.4
Your QRISK® Healthy Heart Age***	83

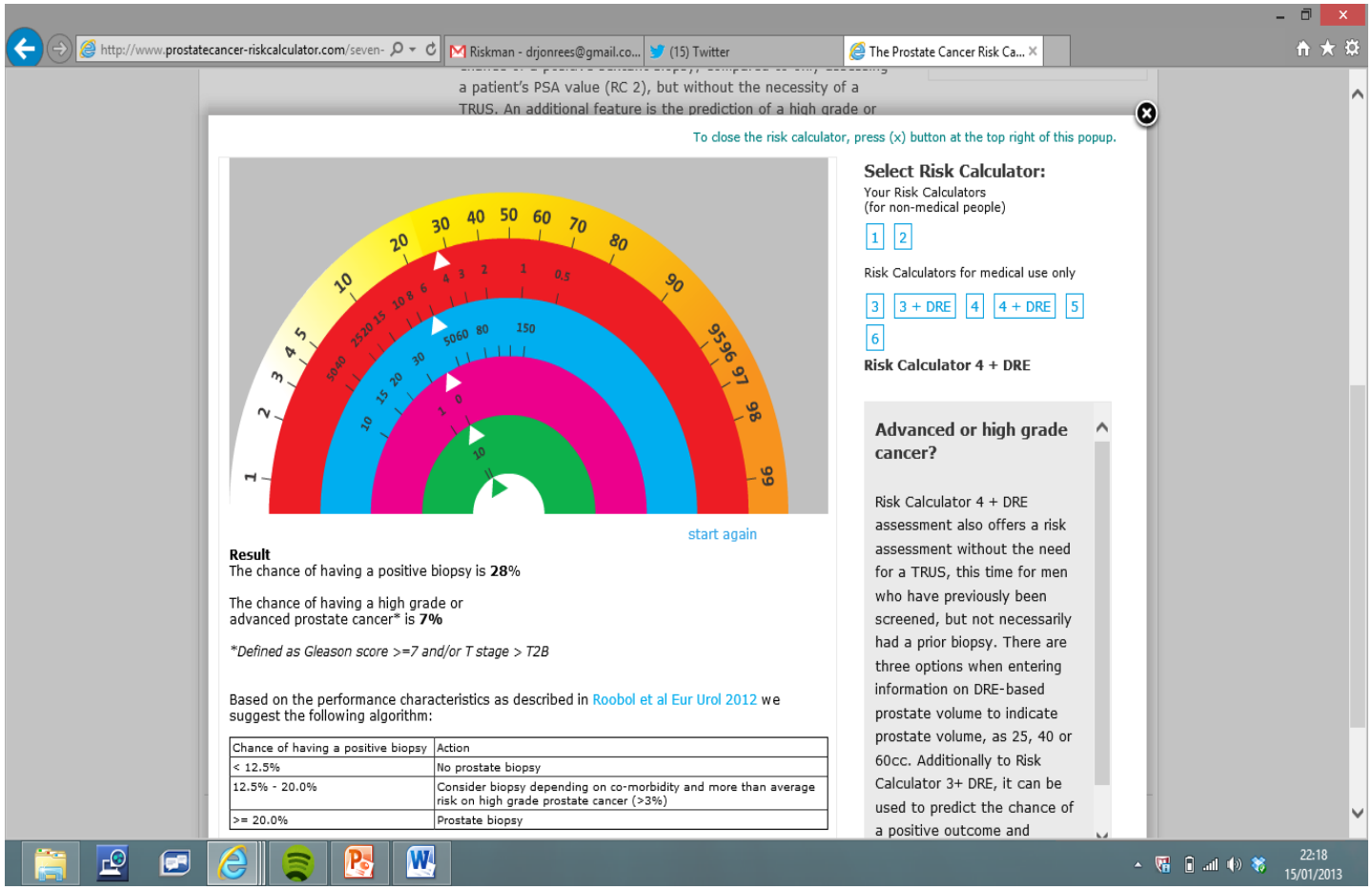
* This is the score of a healthy person of your age, sex and ethnic group, i.e. with no adverse clinical indicators and a cholesterol ratio of 4.0, systolic blood pressure of 125 and BMI of 25.

** Your relative risk is your risk divided by the healthy person's risk.

*** Your QRISK® Healthy Heart Age is the age at which a healthy person of your sex and ethnicity has your 10-year QRISK®2 score.

Risk based approach to PSA

ERSPC Risk Calculator



www.prostatecancer-riskcalculator.com

DIAGNOSIS

Diagnosis

“The bladder is an unreliable witness…”

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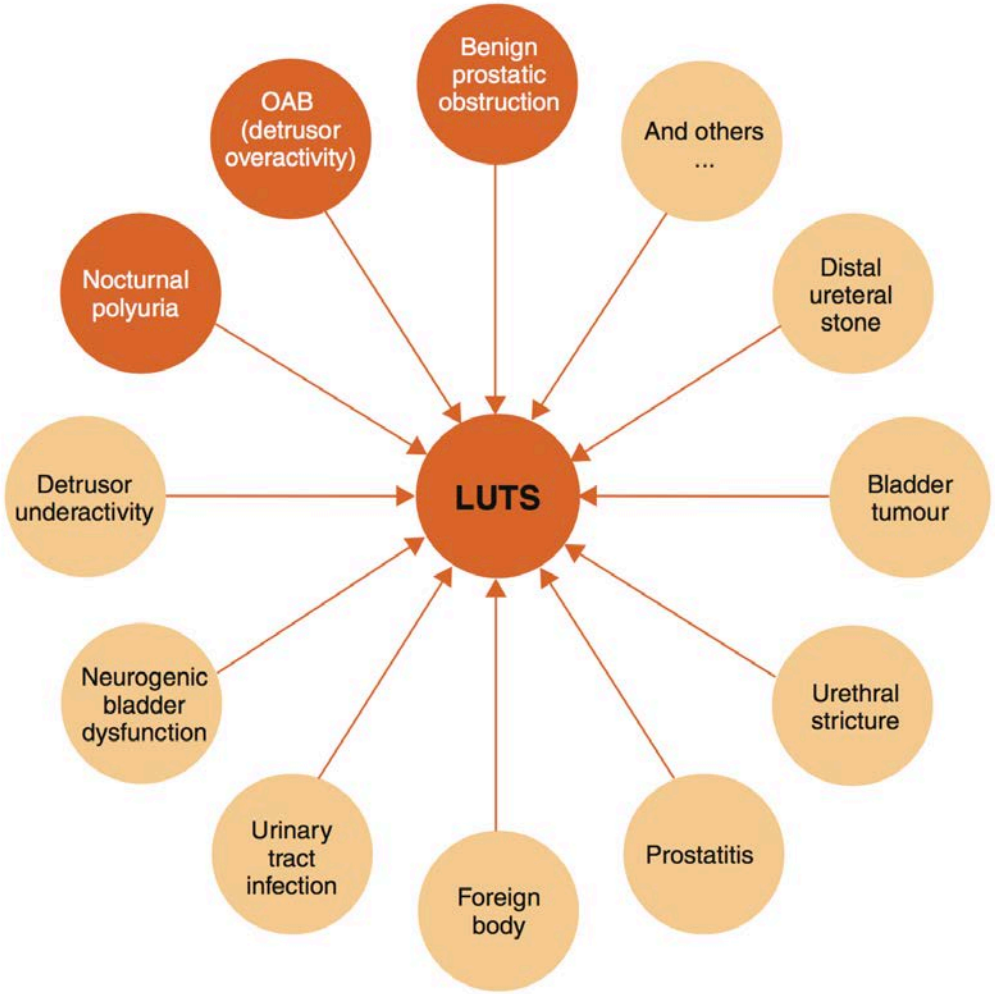
Causes of Male LUTS: 'Urocentric'



Gratzke C et al. EAU Guidelines on the assessment of non-neurogenic LUTS including BPO. Eur Urol 2015

‘It is misleading to attribute individual symptoms to sex differences or to a specific underlying organ. LUTS are a non–sex-specific, non–organ-specific group of symptoms, which are sometimes age-related and progressive’

Chapple CR, Wein AJ, Abrams P, et al. Lower urinary tract symptoms revisited: a broader clinical perspective. Eur Urol 2008; 54(3):563–569

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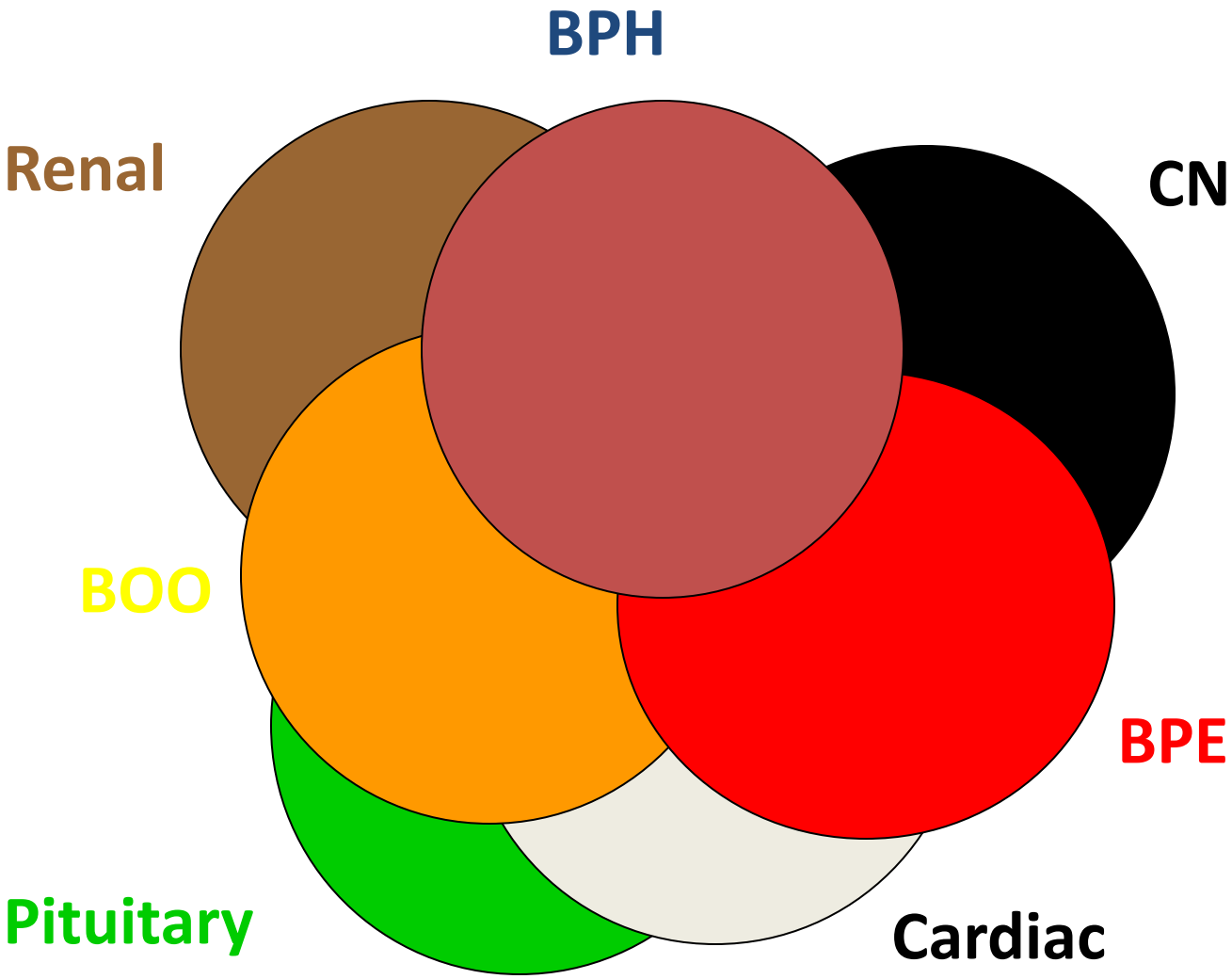
Causes of Male LUTS: “Holistic”



Example of 'Urocentric' approach to LUTS

- 48 year old male referred to Community Urology Service
- LUTS – already taking tamsulosin & finasteride
- Symptoms uncontrolled by medication – "please assess for TURP"

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Case Study

- Main complaint – nocturia, urinary frequency
- No voiding symptoms
- Overweight – BMI 35
- Snorer, tired (assumed due to nocturia)
- Drinks 1L coke in evening, tea+ during daytime
- Amlodipine for blood pressure

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Case study – management plan

- Stop tamsulosin & finasteride
- Trial off amlodipine
- Sleep assessment by GP, likely referral to sleep clinic for ?OSA
- Weight loss & exercise
- Check HbA1c
- Changes in fluid intake, leg elevation

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Symptom based approach

- Voiding symptoms
  - Low severity / bother – reassure
  - Higher severity / bother – trial of alpha blocker
  - Failure of alpha blocker – consider flow test to exclude urethral stricture / urodynamics to exclude detrusor underactivity

Symptom based approach

- Storage symptoms
  - Discuss fluid intake – type, timing, volume
  - Advice re weight loss / exercise
  - Look at medications
  - Bladder training / PFE

  - Consider anti-muscarinic / mirabegron
  - Urodynamics if not responding

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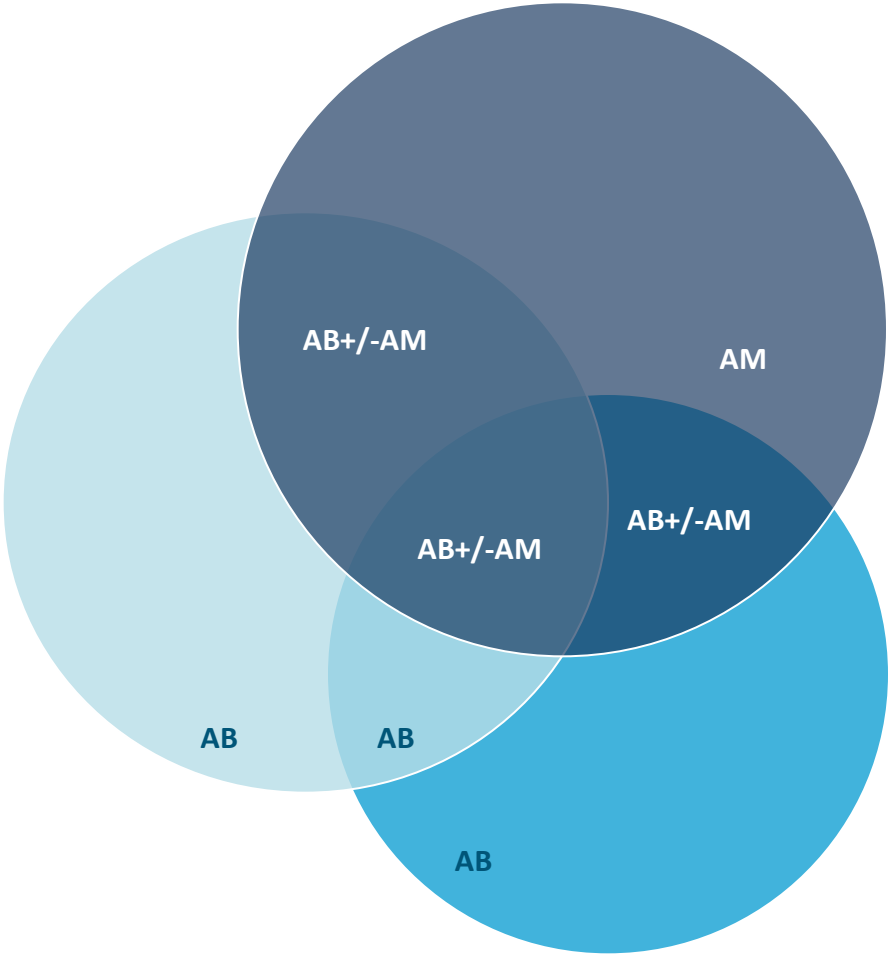
Symptom pattern should determine 1st line therapy



AB= Alpha Blocker
AM= Anti-muscarinic

Voiding
Storage
Post-micturition

Symptom based approach

- Nocturia (isolated, in absence of other storage symptoms)
  - Fluid intake
  - Comorbidities – HF, DM, OSA etc
  - Medications – CCB, Diuretics etc
  - Weight, exercise

  - THINK NOCTURNAL POLYURIA

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TREATMENT OF LUTS

Lifestyle advice

- What is lifestyle advice??
  - Drink less caffeine to reduce frequency / urgency
  - Drink less in the evening to reduce nocturia
  - Wait until your symptoms are bad enough to justify long term medication

- Anything else??

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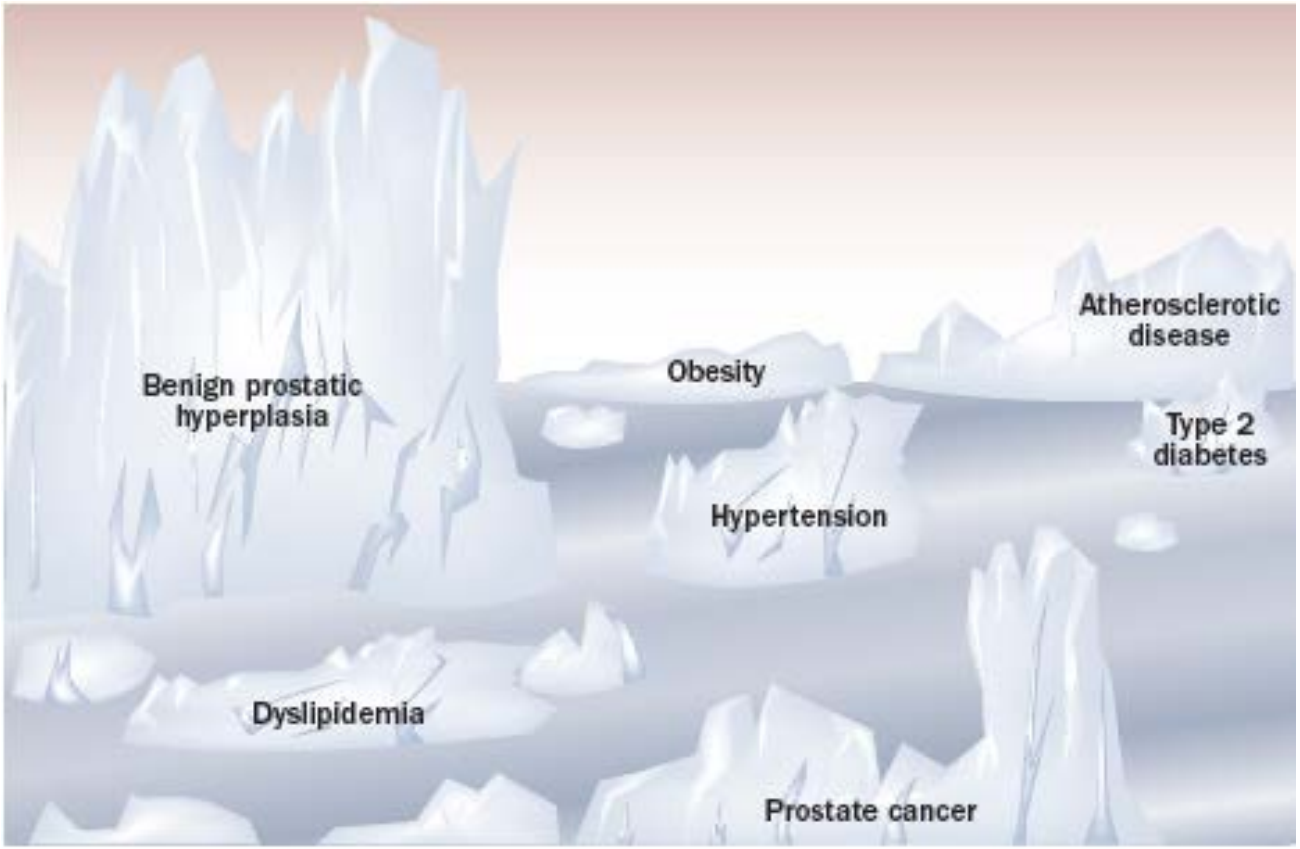
Tip of the iceberg……



Hammarsten J. Nat Rev Urol 2011; 8; 483-494

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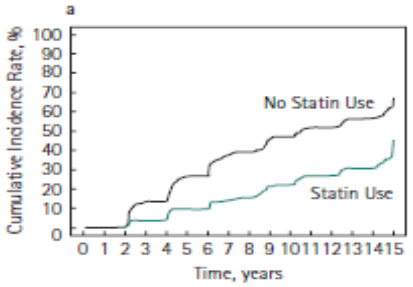
Lifestyle Intervention – LUTS/BPH

- "In older men, central obesity and higher physical activity associated with increased & decreased risks of incident LUTS, respectively....."[1]
- "Prevention of chronic urinary symptoms represents another potential health benefit of exercise in elderly men....."[1]
- "Statin use associated with 6.5 to 7 year delay in the onset of moderate / severe LUTS...."[2]



1. Kellogg Parsons J et al Eur Urol 2011
2. St Sauver JL et al BJU Int 2010

The Urologist as the advocate of Men's Health

"The Urologist as a 'Men's Health' doctor has the opportunity, working in conjunction with the family physician, to identify and treat the hypertension, hyperlipidaemia and diabetes that results in the endothelial damage that causes ED…. this is surely not too demanding or inappropriate a task. The Urologist can also provide lifestyle advice about diet and alcohol, both of which commonly exacerbate the early symptoms of BOO arising from BPH…."

Roger Kirby, BJU Comments 2005

Kirby R. BJU 2005; 95: 929

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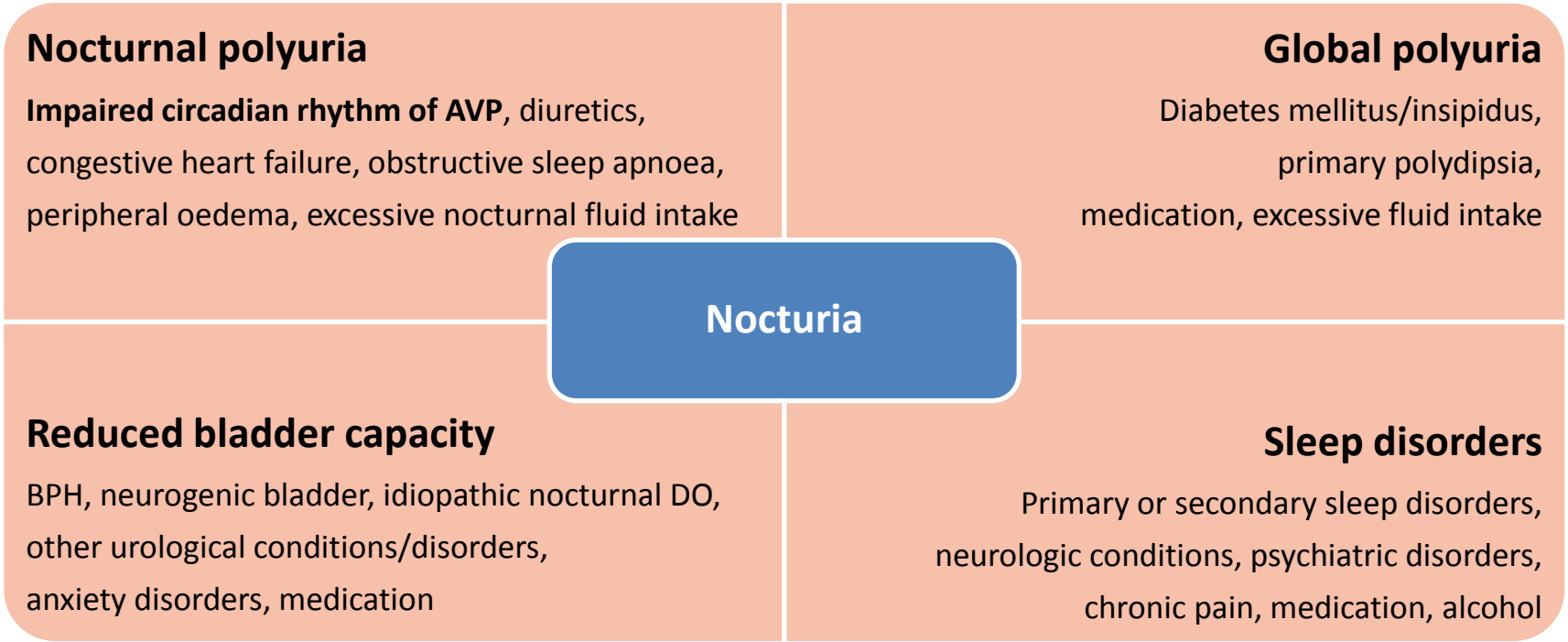
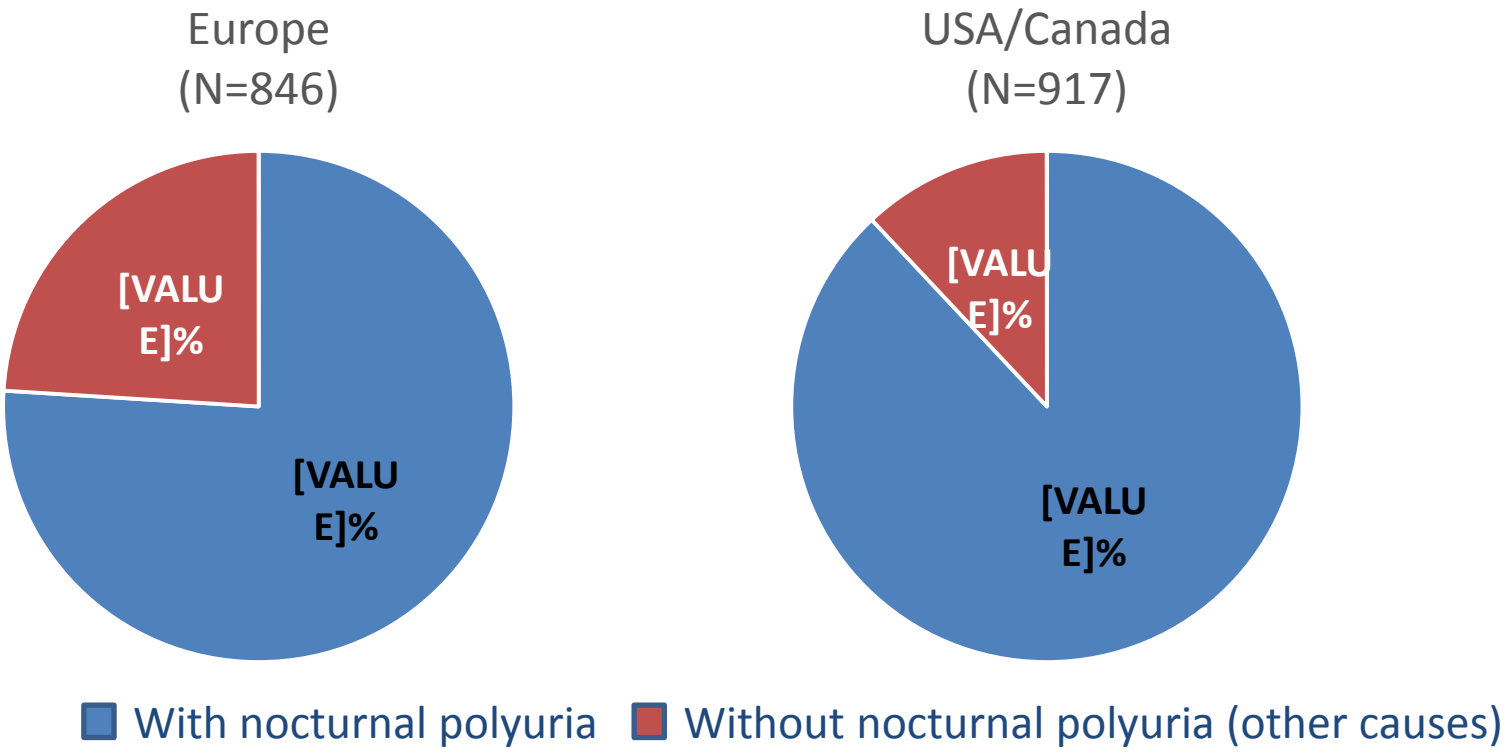
Nocturia is a multifactorial medical condition



AVP: arginine vasopressin; BPH: benign prostatic hyperplasia; DO: detrusor overactivity

Dani H et al. Nat Rev Urol 2016;13:573-83; Nimeh T et al. Curr Urol Rep 2015;16:66

Nocturia is primarily caused by nocturnal polyuria



Nocturnal polyuria based on data from 3- or 7-day frequency-volume charts completed by patients as part of screening for inclusion in subsequent trials of nocturia therapy

Weiss JP et al. J Urol 2011;196:1358-63

Management should be tailored depending on the aetiology of nocturia

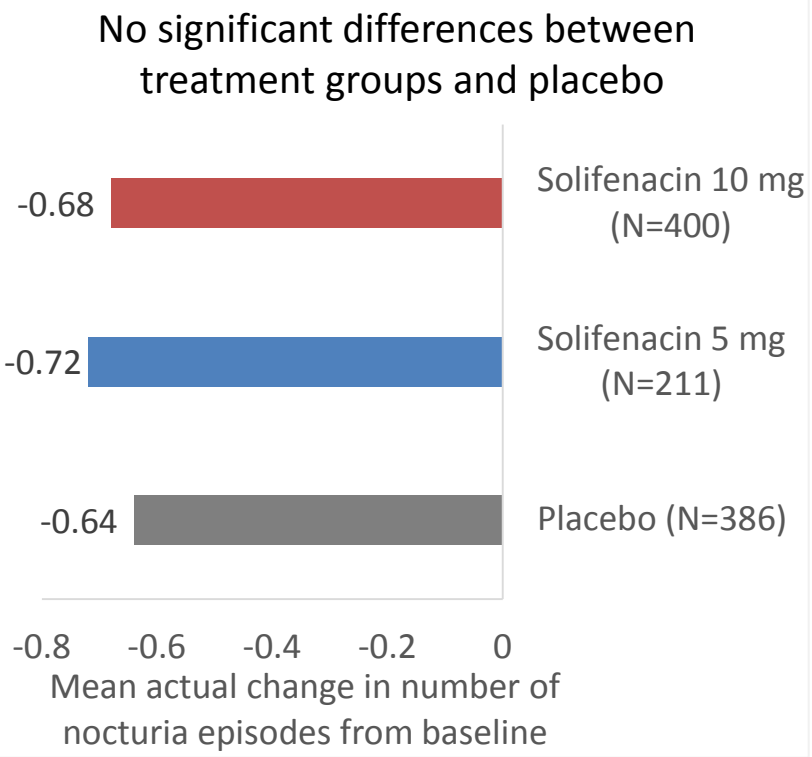
Behavioural modifications

Nocturnal polyuria	Global polyuria	Reduced bladder capacity
• Reduce fluid intake • Therapy for specific medical condition • Desmopressin • Change time of taking diuretics	• Reduce fluid intake • Treat diabetes mellitus/insipidus	• Therapy for OAB/BPH • Therapy for other urological condition

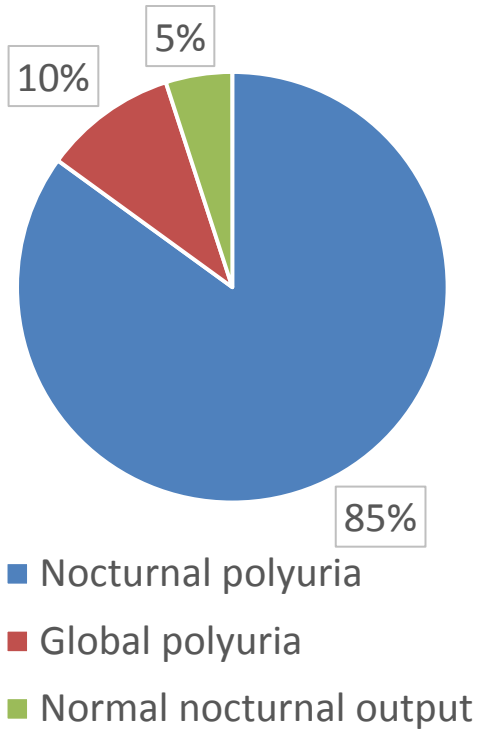
Nimeh T et al. Curr Urol Rep 2015;16:66; Weiss JP et al. Neurourol Urodyn 2014;33:S19-24

Therapies for OAB and BPH do not treat nocturia due to nocturnal polyuria

Patients with nocturia due to nocturnal polyuria (N=997)[1]



Patients unresponsive to α_1-blocker treatment (N=41)[2]



1. Brubaker L and FitzGerald MP. Int Urogynecol J 2007;18:737-41; 2. Yoong HF et al. Med J Malaysia 2005;60:294-6

Mirabegron for OAB?

- **NICE** recommends Mirabegron as:
  - an option for treating symptoms of OAB only for people in whom antimuscarinic drugs are
    - contraindicated
    - clinically ineffective
    - or have unacceptable side effects

Mirabegron for treating symptoms of OAB. NICE TA 290 June 2013

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Antimuscarinics: Cognitive Function

- Prospective population based cohort study
- 3434 subjects ≥ 65 yrs
- Cumulative anticholinergic exposure measured using Total Standardised Daily Doses (TSDD)
- Outcomes: Dementia and Alzheimer's Disease
- Commonest classes of drug used

  Tricyclics Antihistamines
  Antimuscarinics

- **Higher cumulative anticholinergic use associated with an increased risk of dementia**

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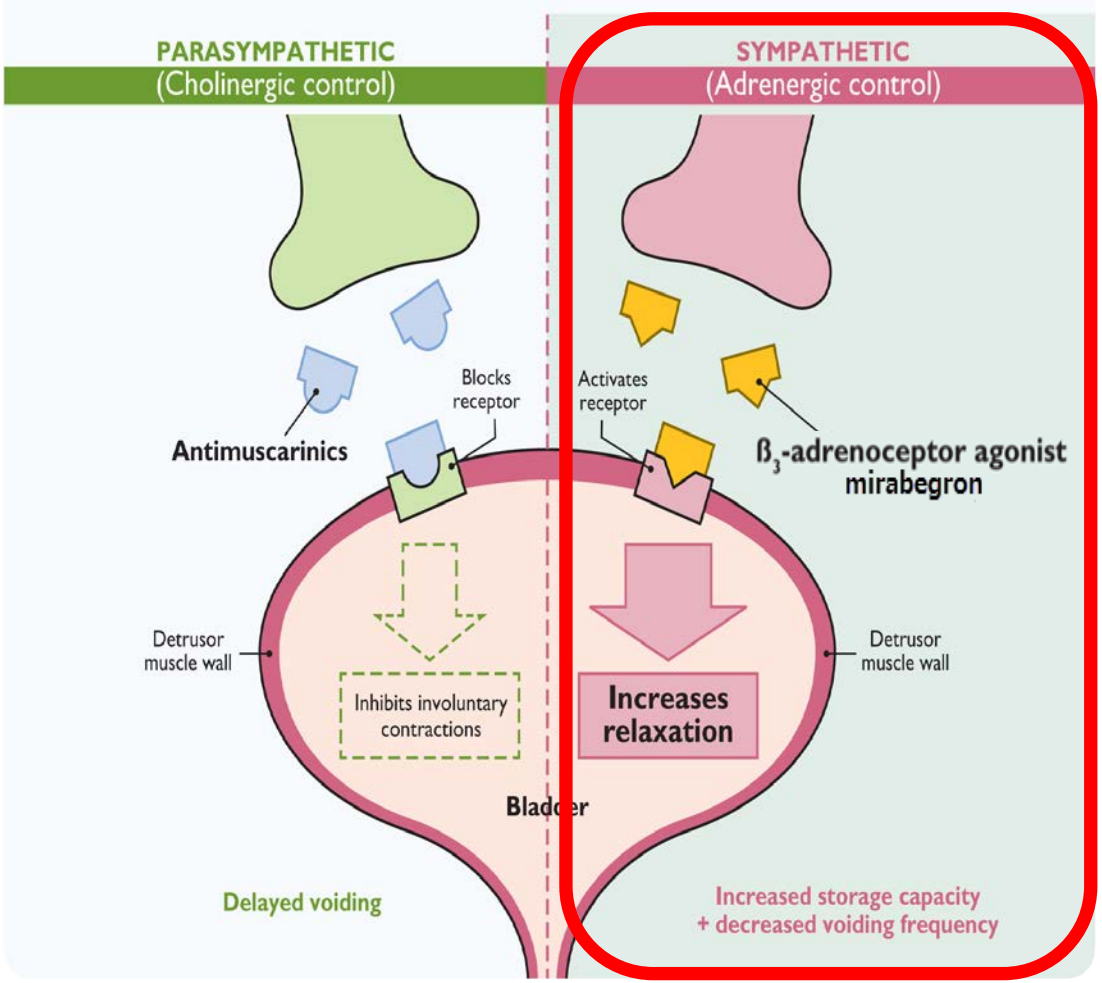
Gray, S, Anderson M et al. JAMA Intern Med 2015

Mode of action: Antimuscarinics & Mirabegron



Adapted from Betmiga Summary of Product Characteristics, December 2012 and Chu et al., 2006.

Betmiga Summary of Product Characteristics, December 2012

.

Gras J. Drugs of Today 2012;48(1):25-32

Chu F, Dmochowski R. Am J Med 2006;119(3A):3S–8S

IPSS: Tadalafil vs placebo & Tamsulosin vs placebo

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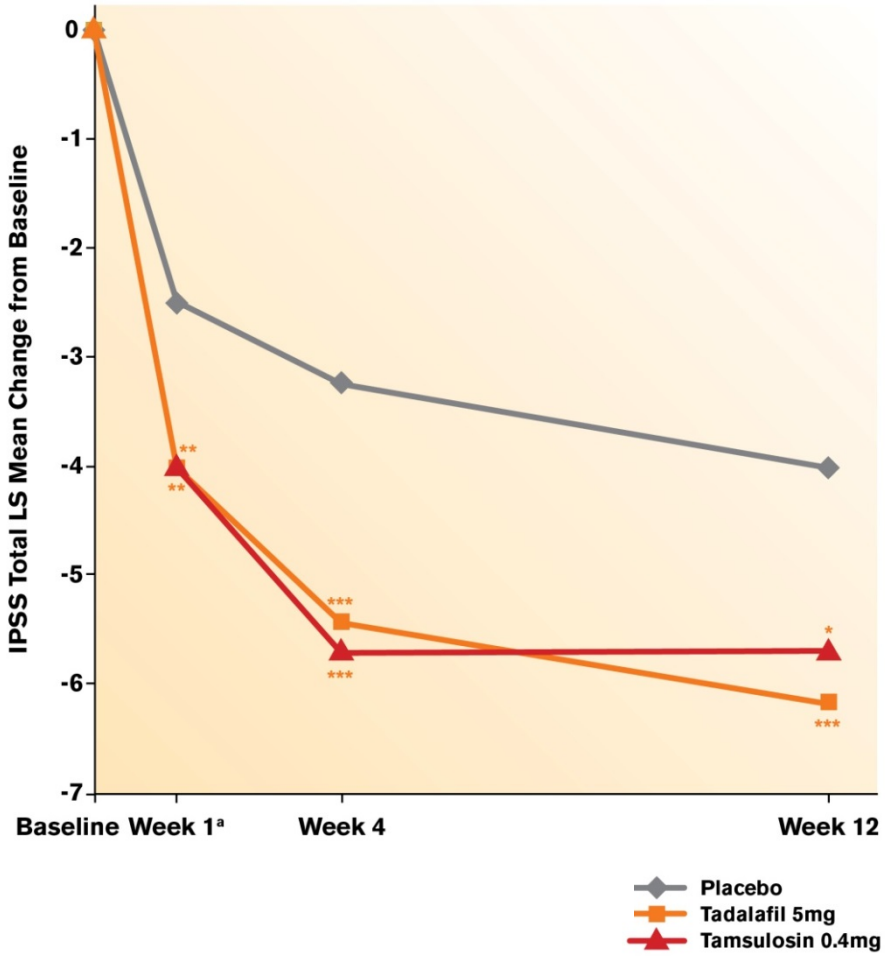
Treatment	Baseline Mean (SD)	12-week Endpoint LS Mean Change (ANCOVA, LOCF)
Placebo	17.4 (6.0)	-4.2
Tadalafil 5mg	17.2 (4.9)	-6.3***
Tamsulosin 0.4mg	16.8 (5.3)	-5.7*



*p<.05, **p<.01, ***p≤.001 compared to placebo
[a]Values for week 1 are based on mIPSS

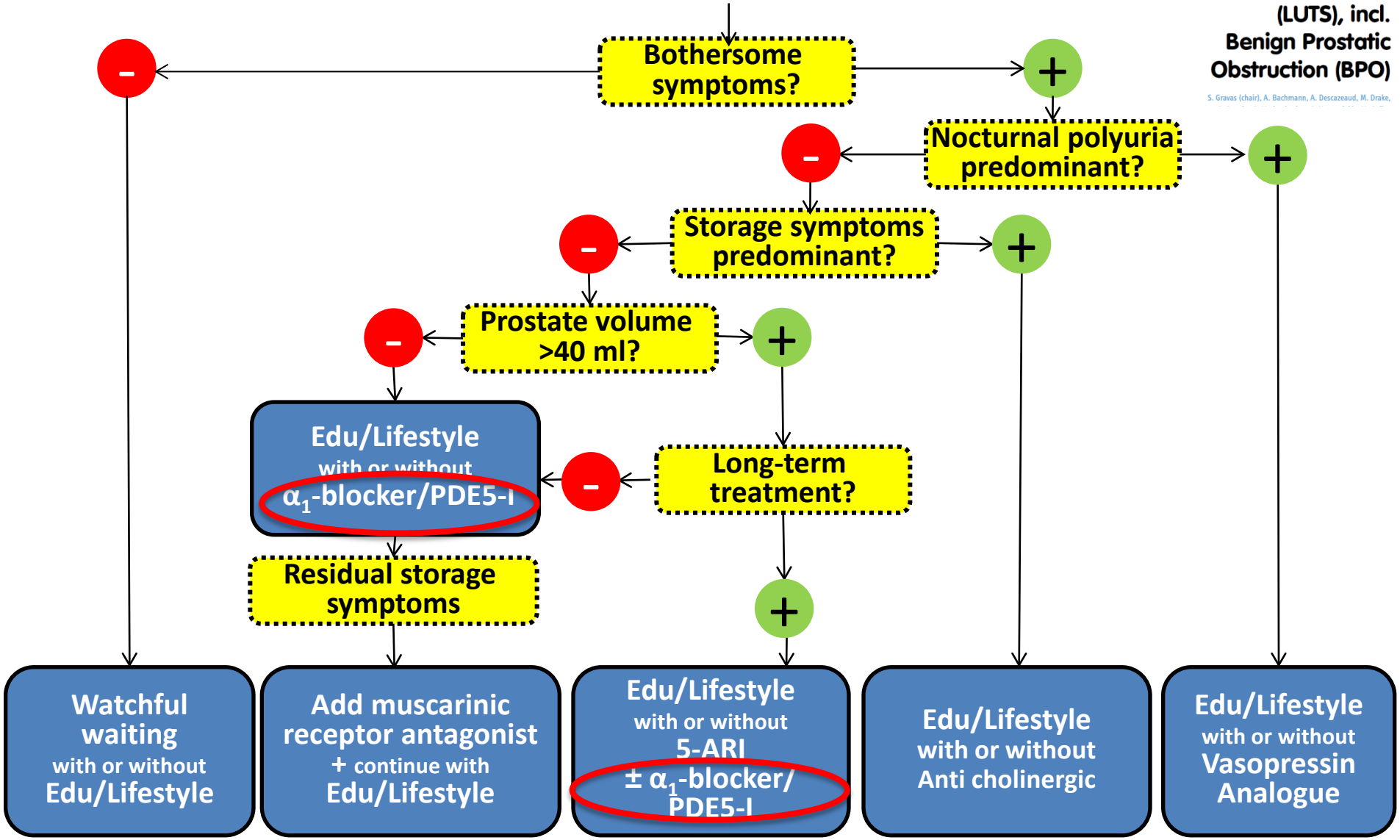
Tamsulosin is an active control. Both treatments are compared to placebo.

Oelke et al. *Eur Urol* 2012;61: 917 - 925

Male LUTS EAU Guidelines 2015
(without indications for surgery)

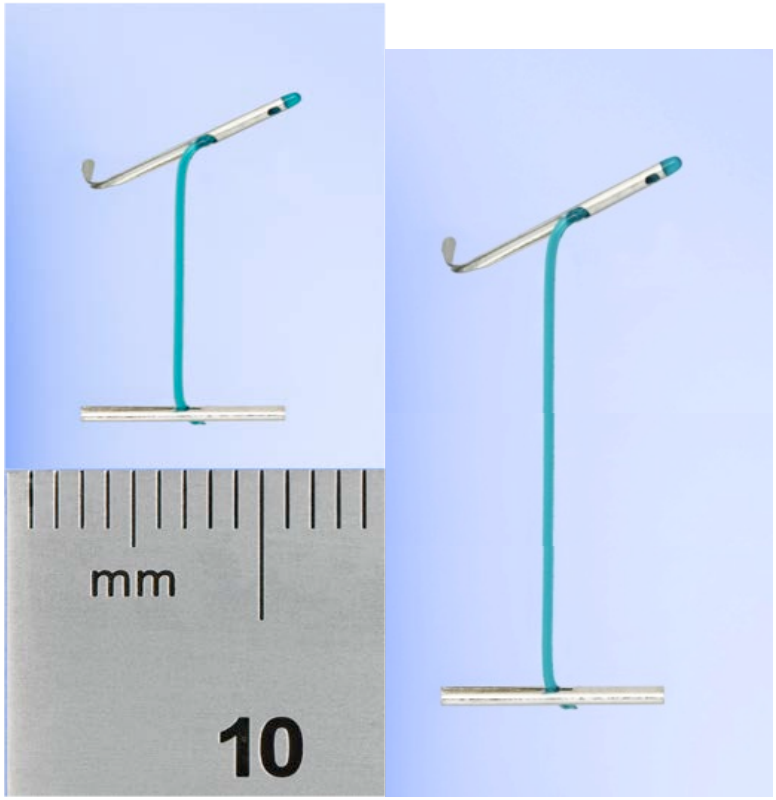
Guidelines on the Management of Non-Neurogenic Male Lower Urinary Tract Symptoms (LUTS), incl. Benign Prostatic Obstruction (BPO)

S. Gravas (chair), A. Bachmann, A. Descazeaud, M. Drake,



The UroLift® Implant

- Permanent Transprostatic Tissue Retractor
  - Implant sized *in situ* to prostate lobe
  - Nitinol, PET, Stainless Steel



Delivery Device

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Prostatic Urethral Lift (UroLift® System)

- Directly open the urethra
- No tissue removal or ablation
- Improved outcomes, lower morbidity

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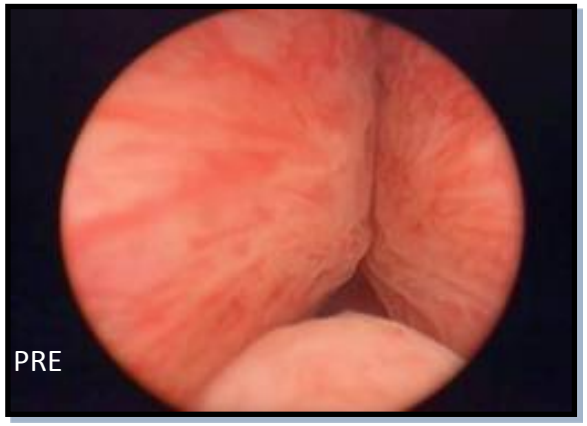
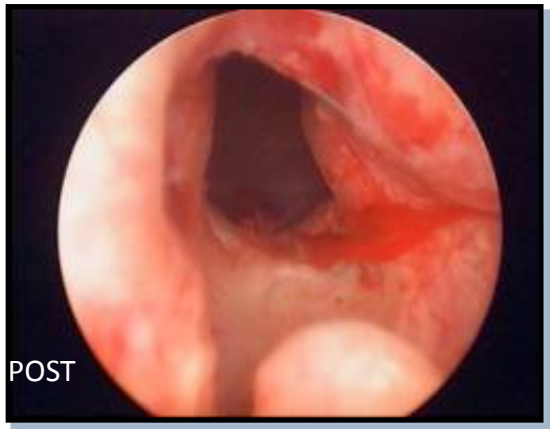
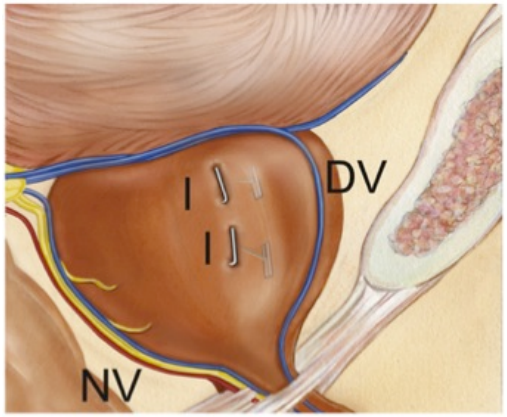
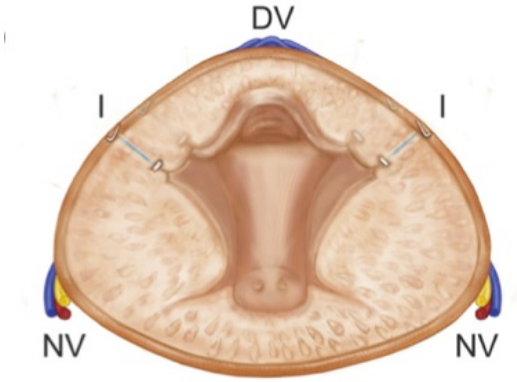
Immediate UroLift® Effect

- Mechanically opens prostatic urethra
- Result is visible under cystoscopy
- Implants are anterolateral, away from NV bundles or dorsal venous complex









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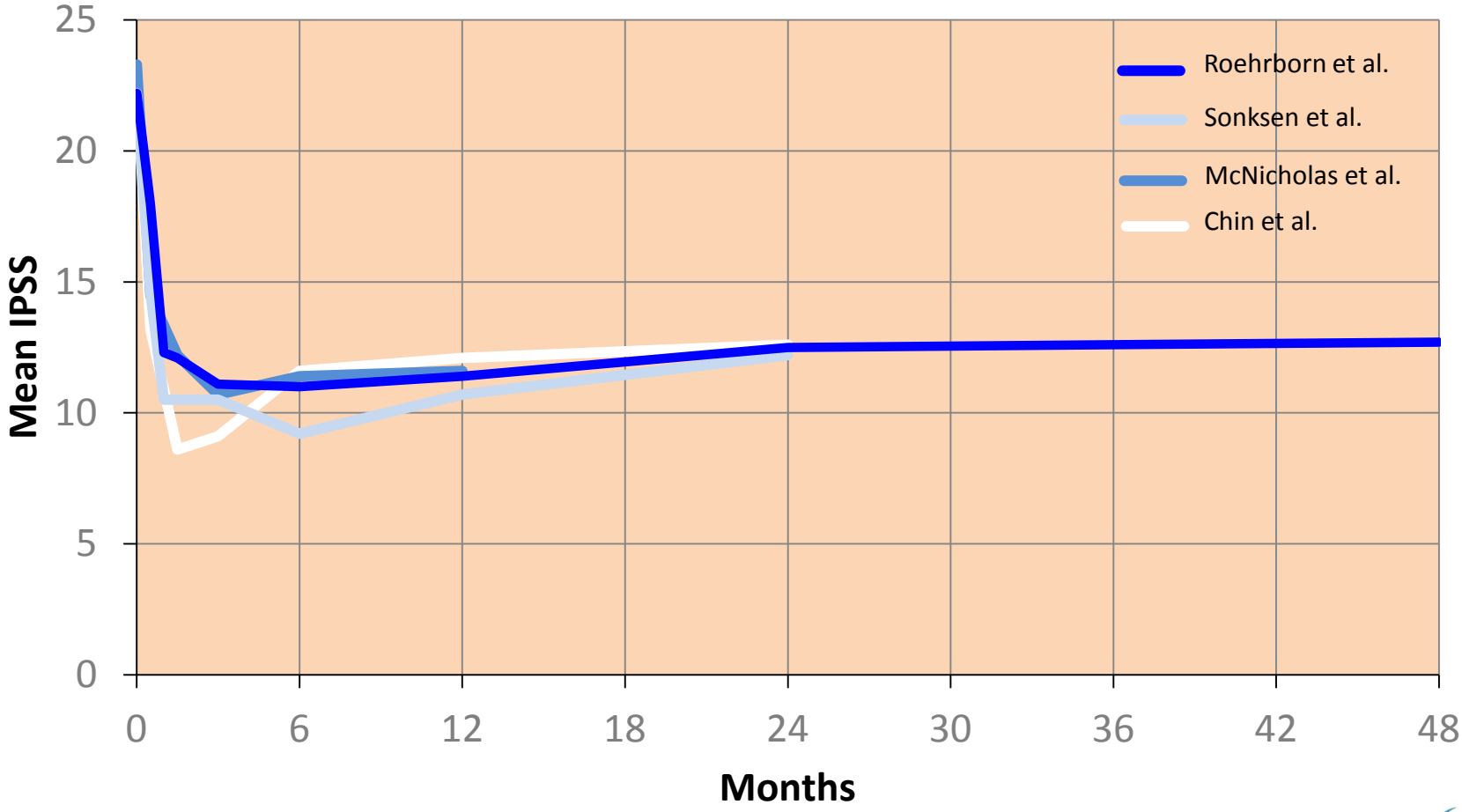
Overall impact on symptoms

- Over 950 patient-years, >60 operators
- Rapid response (2 weeks); durable to at least 4 years



Roehrborn et al. AUA2016, Can J Urol 2015; Sonksen et al. AUA2016, Eur Urol 2015; McNicholas et al. Eur Urol 2013; Chin et al. Urology 2012

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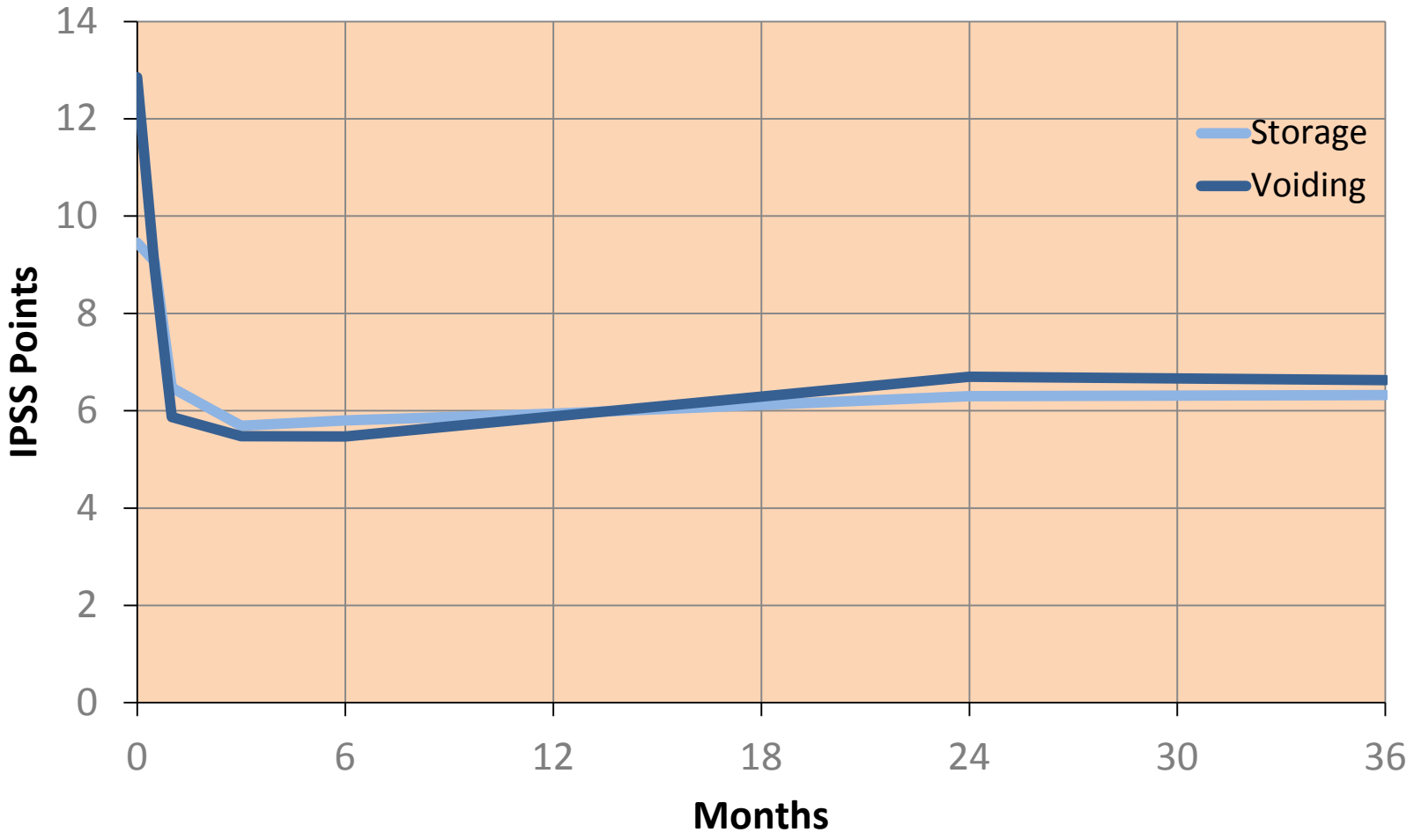
Improvement in storage & voiding LUTS



Roehrborn et al. Can J Urol 2015

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Results and evaluation (LEEDS – thanks to Mr Oliver Kayes)

Over 72 patients have been treated with UroLift. In the majority of these patients, local anaesthetic was used and is now routine. The results of a recent audit are shown in the table below.

Procedure	Number of procedures (Jan – Sep 2016)	Average length of stay	Theatre time (Patient turnaround) (mins)	Anaesthetic (local / general)
UroLift	72	3-4 hours	25 mins	LA (85%) GA (15%)
TURP	122	3 days	56	GA (100%)
HoLEP	115	17 hours	72	GA (100%)

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Summary

- LUTS require a holistic approach to diagnosis & management

- New treatments available – how will national / local pathways & guidelines respond to these changes?

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