



In the name of God

Urge urinary incontinence in men


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RISK FACTORS FOR URINARY INCONTINENCE IN MEN

- Age
- Urologic infection
- Functional and cognitive impairment
- Neurologic diseases and comorbidities such as diabetes
- Drugs
- Surgery (e.g., prostatectomy)

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- **UI should be described by specifying relevant factors such as type, frequency, severity, precipitating factors, social impact, effect on hygiene and QoL, the measures used to contain the leakage, and whether the individual seeks or desires help because of UI.**

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- UI in men is prevalent but less so than in women.
 - UI in men is in a ratio of about 1 : 2 compared with UI in women.
 - Prevalence in men varies from 1% to 39%

TYPES OF URINARY INCONTINENCE

- **Stress Urinary Incontinence**

SUI is more common in women than in men and usually occurs in men only after a prostatectomy, in which the external urethral sphincter is damaged.

Urgency Urinary Incontinence

- It is part of the **overactive bladder (OAB) syndrome**, and **90% of men who experience UUI will have detrusor overactivity (DO) on urodynamic studies**, which leads to a rise in intravesical pressure that overcomes the outlet resistance. **Patients who suffer with UUI have *wet OAB*.**

Mixed Urinary Incontinence

- This condition is uncommon in men, although it may occur after prostatectomy .

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- **Nocturnal Enuresis**
 - **Continuous Urinary Incontinence**
 - **Incontinence Associated With Chronic Retention**

EVALUATION

- **History**
- **Physical Examination**
- *Measurement of Height and Weight to Calculate Body Mass Index*
- *Urinalysis*
- *Bladder Diary*

Bladder Diary

NAME _____

DAY 1 DATE: ____/____/____

Time	Drinks		Urine output (mL)	Bladder sensation	Pads
	Amount	Type			
6 am					
7 am					
8 am					
9 am					
10 am					
11 am					
Midday					
1 pm					
2 pm					
3 pm					
4 pm					
5 pm					
6 pm					
7 pm					
8 pm					
9 pm					
10 pm					
11 pm					
Midnight					
1 am					

DAY 2 DATE: ____/____/____

Time	Drinks		Urine output (mL)	Bladder sensation	Pads
	Amount	Type			
6 am					
7 am					
8 am					
9 am					
10 am					
11 am					
Midday					
1 pm					
2 pm					
3 pm					
4 pm					
5 pm					
6 pm					
7 pm					
8 pm					
9 pm					
10 pm					
11 pm					
Midnight					
1 am					
2 am					
3 am					
4 am					
5 am					

DAY 3 DATE: ____/____/____


Time	Drinks		Urine output (mL)	Bladder sensation	Pads
	Amount	Type			
6 am					
7 am					
8 am					
9 am					
10 am					
11 am					
Midday					
1 pm					
2 pm					
3 pm					
4 pm					
5 pm					
6 pm					
7 pm					
8 pm					
9 pm					
10 pm					
11 pm					
Midnight					
1 am					
2 am					
3 am					
4 am					
5 am					

Recommendations


- Ask patients with UI to complete a voiding diary when standardised assessment is needed.
- Use a diary duration of at least three days.
- Strong

Bladder sensation

- **0 - No sensation of needing to pass urine, but passed urine for "social reasons"**
- **1 - Normal desire to pass urine and no urgency**
- **2 - Urgency but it had passed away before you went to the toilet**
- **3 - Urgency but managed to get to the toilet, still with urgency, but did not leak urine**
- **4 - Urgency and could not get to the toilet in time, so you leaked urine**



International Consultation on
Incontinence Questionnaire Male
Lower Urinary Tract Symptoms
(ICIQ-MLUTS).



International Consultation on
Incontinence Questionnaire
Urinary Incontinence Short Form
(ICIQ-UI-SF).

Initial number

ICIQ-UI SF

DAY MONTH YEAR

CONFIDENTIAL

Today's date

Many people leak urine some of the time. We are trying to find out how many people leak urine, and how much this bothers them. We would be grateful if you could answer the following questions, thinking about how you have been, on average, over the PAST FOUR WEEKS.

1 Please write in your date of birth:

DAY MONTH YEAR

2 Are you (tick one):

Female Male

3 How often do you leak urine? (Tick one box)

- never 0
- about once a week or less often 1
- two or three times a week 2
- about once a day 3
- several times a day 4
- all the time 5

4 We would like to know how much urine you think leaks.

How much urine do you usually leak (whether you wear protection or not)?

(Tick one box)

- none 0
- a small amount 2
- a moderate amount 4
- a large amount 6

5 Overall, how much does leaking urine interfere with your everyday life?

Please ring a number between 0 (not at all) and 10 (a great deal)

0 1 2 3 4 5 6 7 8 9 10
not at all a great deal

ICIQ score: sum scores 3+4+5

6 When does urine leak? (Please tick all that apply to you)

- never – urine does not leak
- leaks before you can get to the toilet
- leaks when you cough or sneeze
- leaks when you are asleep
- leaks when you are physically active/exercising
- leaks when you have finished urinating and are dressed
- leaks for no obvious reason
- leaks all the time

Thank you very much for answering these questions.

Recommendation

- Use a validated and appropriate questionnaire when standardised assessment is required.

- Strong

Pad Testing

- Most guidelines have not recommended the use of pad testing.
- **Increased pad weight is therefore probably a better measure of the severity of UI, and usually less than 200 g/day is considered mild, 200 to 400 g/day is moderate, and more than 400 g/day is severe.**

Recommendations

- Use a pad test of standardised duration and activity protocol.
- Strong
- Use a pad test when quantification of UI is required.
- weak

Urine Flow Rate and Postvoid Residual

- These measurements are inexpensive and easy to perform, and they are noninvasive.
- A fast-rising flow rate may indicate an OAB resulting from urgency, and a slow-rising one with a long tail on the flow curve may indicate bladder outlet obstruction.
- **It is recommended that at least two flows be performed to ensure that they are representative of the manner in which the patient normally voids.**

Recommendations

- When measuring PVR, use US.
 - Measure PVR in patients with UI who have voiding symptoms.
 - Measure PVR when assessing patients with complicated UI.
 - Post-void residual should be monitored in patients receiving treatments that may cause or worsen voiding dysfunction, including surgery for SUI.
-
- strong

Measurement of Prostate-Specific Antigen


- If the testing is not going to change management, and if the digital rectal examination was normal, it should not be performed unless the patient requests it.

Blood Tests

- **Blood tests should be tailored according to the patient history and examination.**
- If the postvoid residual is high or a patient is diabetic, then renal function tests and glucose are indicated.
- In general, if it is an index case of UUI or SUI with no PVR, then blood tests are not indicated.

Urinalysis and urinary tract infection

- Reagent strip ('dipstick') urinalysis may indicate UTI, proteinuria, haematuria or glycosuria requiring further assessment.

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- Urinalysis negative for nitrite and leucocyte esterase reliably excludes UTI in people with UI and should be included, with urine culture when necessary, in the evaluation of all patients with UI. Urinary incontinence may occur during symptomatic UTI and existing UI may worsen during UTI. The rate and severity of UI was unchanged after eradication of asymptomatic bacteriuria in nursing home residents.

Recommendations

- Perform urinalysis as a part of the initial assessment of a patient with UI.
- If a symptomatic UTI is present with UI, reassess the patient after treatment.
- Do not routinely treat asymptomatic bacteriuria in elderly patients to improve UI.
- strong

Imaging

- Imaging with a plain x-ray radiograph or urinary tract ultrasound are not indicated in patients with UI, unless there is concern that the patient may be suffering with upper tract abnormalities, high postvoid residual (PVR), or if there is suspicion of stones.

Recommendation

- Do not routinely carry out imaging of the upper or lower urinary tract as part of the assessment of UI.
- strong

Endoscopy

- **Urethrocytoscopy is indicated in patients suspected of having a urethral stricture, bladder outlet obstruction, or another pathology seen on urinalysis, such as blood, or flow tests such as a high PVR.**

Urodynamic Studies

- **urodynamics is that it should not be performed unless it is going to change the management of the patient and unless it would provide the clinician with more information that would alter his or her management of the patient.**

- Most major international guidelines including the International Consultation on Incontinence, the European Association of Urology, and the American Urological Association recommend that patients be treated with conservative therapy and medical therapy before performing urodynamics, and if these treatments fail to control the patient's symptoms and the patient would like to have, or needs, a surgical intervention, then that is when urodynamics is performed—that is, **before invasive therapy**.

Urodynamics should be considered in the following situations:

- To identify factors contributing to LUT dysfunction and to assess their relevance
- • To predict the consequences of LUT dysfunction on the upper tracts
- • To predict the consequences and outcomes of therapeutic intervention
- • To confirm and/or understand the effects of interventional techniques
- • To investigate the reasons for treatment failure
- • Before undergoing any surgical intervention

Recommendations

- Do not routinely carry out urodynamics when offering treatment for uncomplicated SUI.
- Strong
- Perform urodynamics if the findings may change the choice of invasive treatment.
- Weak
- Do not use urethral pressure profilometry or leak point pressure to grade severity of incontinence.
- strong


PRINCIPAL METHODS OF TREATING MEN WITH URINARY INCONTINENCE

Underlying disease/cognitive impairment

- • cardiac failure;
- • chronic renal failure;
- • diabetes;
- • chronic obstructive pulmonary disease;
- • neurological disease including stroke and multiple sclerosis;
- • general cognitive impairment;
- • sleep disturbances, e.g. sleep apnoea;
- • depression;
- • metabolic syndrome.

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- Patients with UI who have associated conditions, should have appropriate treatment for those conditions in line with good medical practice.

 - strong

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- Adults with UI who also suffer from constipation should be given advice about bowel management in line with good medical practice.
 - strong

Conservative


- Lifestyle changes: weight loss, stopping smoking, exercise, food and fluid manipulation.
- Pelvic floor muscle training
- Bladder training:
Scheduled voiding regimen and double voiding if necessary is a valid method to reduce UI and improve bladder capacity. Some studies suggested that bladder training was equivalent to pharmacologic therapy


Recommendations


- Encourage overweight and obese adults with UI to lose weight and maintain weight loss.
- Advise adults with UI that reducing caffeine intake may improve symptoms of urgency and frequency but not incontinence.
- Provide smoking cessation strategies to patients with UI who smoke.
- Strong
- Review type and amount of fluid intake in patients with UI.
- weak


Treatment of Urgency Urinary Incontinence

- Initial conservative treatment of UUI includes behavioral modifications and lifestyle changes, such as reducing fluid input by 25% as long as the patient is drinking more than 1 L/day, stopping smoking, reducing weight, and avoiding caffeinated and fizzy drinks that may irritate the bladder.

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- **The patient is also taught bladder training and pelvic floor muscle training to supplement the fluid manipulation. These treatments must be attempted for at least 6 weeks to obtain benefit, and they should ideally be tried for 3 months.**

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- If the previously outlined treatment fails, the patient can then be offered antimuscarinic therapy, if there are no contraindications. At least two antimuscarinics were recommended to be tried for at least 4 weeks each, starting at a low dose and building up to a maximum dose.

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- All of the antimuscarinics have Level 1 evidence and Grade A recommendations for their use.
 - oxybutynin, tolterodine, fesoterodine, solifenacin, darifenacin, propiverine, and trospium chloride
 - oxybutynin is also available in a topical gel formulation and as a skin patch.

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- Solifenacin may be preferred over tolterodine for better efficacy and less risk of dry mouth.
 - The combination of two antimuscarinics or doubling the recommended dose of some antimuscarinics could be an option in selected patients to increase efficacy.


Summary of cure rates and discontinuation rates of antimuscarinic drugs from RCTs which reported these outcomes

Drug	No. of studies	Patients	Relative risk (95% CI) (of curing UI)	Number needed to treat (95% CI) (to achieve one cure of UI)
Cure of incontinence				
Fesoterodine	2	2,465	1.3 (1.1-1.5)	8 (5-17)
Oxybutynin (includes IR)	4	992	1.7 (1.3-2.1)	9 (6-16)
Propiverine (includes IR)	2	691	1.4 (1.2-1.7)	6 (4-12)
Solifenacin	5	6,304	1.5 (1.4-1.6)	9 (6-17)
Tolterodine (includes IR)	4	3,404	1.2 (1.1-1.4)	12 (8-25)
Trospium (includes IR)	4	2,677	1.7 (1.5-2.0)	9 (7-12)
Discontinuation due to adverse events				
			Relative Risk (95% CI) (of discontinuation)	NNT (95% CI) (of one discontinuation)
Darifenacin	7	3,138	1.2 (0.8-1.8)	
Fesoterodine	4	4,433	2.0 (1.3-3.1)	33 (18-102)
Oxybutynin (includes IR)	5	1,483	1.7 (1.1-2.5)	16 (8-86)
Propiverine (includes IR)	2	1,401	2.6 (1.4-5)	29 (16-77)
Solifenacin	7	9,080	1.3 (1.1-1.7)	78 (39-823)
Tolterodine (includes IR)	10	4,466	1.0 (0.6-1.7)	
Trospium (includes IR)	6	3,936	1.5 (1.1-1.9)	56 (30-228)


Recommendations

- Long-term antimuscarinic treatment should be used with caution in elderly patients especially those who are at risk of, or have, cognitive dysfunction.
- strong


- **mirabegron, which is a β_3 -agonist lipophilic medication that is metabolized in liver, and more than 50% is excreted in the urine. It has been licensed for the treatment of OAB in several countries, including the United States, the United Kingdom and other European countries, and Japan. Mirabegron showed proven efficacy and superiority to tolterodine in terms of urinary incontinence episodes and frequency.**


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- some studies showed no difference in terms of efficacy between antimuscarinics and the β_3 -agonist, the β_3 -agonist does have advantages over antimuscarinics with respect to side effects such as less dry mouth and constipation .However, it can cause palpitations and headaches resulting from hypertension.

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- **Combination therapy of an antimuscarinic with a β_3 -agonist has been shown to be an effective modality of treatment.**

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- A phase II trial has shown that the combination therapy of mirabegron and solifenacin is superior to monotherapy with a safe side effect profile.
 - A phase IIIB trial has shown that the combination of mirabegron 50 mg with solifenacin 5 mg is superior to dose escalation of solifenacin from 5 mg to 10 mg with better efficacy and less side effects.

- combination of alpha-blockers and antimuscarinics or alpha-blockers and β_3 agonists as a treatment option for patient with moderate to severe LUTS.
- in patients with storage and voiding symptoms. PDE-5 inhibitors have been shown to improve LUTS and UI in men.
- **Tadalafil is the only U.S. Food and Drug Association–approved PDE-5 inhibitor for the treatment of voiding LUTS in men.**


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- If conservative and medical therapies fail to control symptoms and the patient requests further treatment, invasive urodynamics is then performed to confirm DO and/or DOI, and minimally invasive surgery, where indicated and available, is offered.

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- **This can either be in the form of cystoscopic intradetrusor injections of botulinum toxin-A, percutaneous sacral neuromodulation (SNM), or percutaneous posterior tibial nerve stimulation (PTNS).**

- **Botox, onabotulinum toxin A, is the only licensed formulation of botulinum toxin A, for idiopathic UUI at 100 units, and for neurogenic DO at 200 units.**
- Patients using Botox should be warned of the risk of urinary retention (approximately 10%), and they should be able and willing to perform intermittent catheterization.
- In addition, the injections must be repeated on average every 6 to 9 months.

Recommendations

- Offer bladder wall injections of onabotulinum toxin A (100 U) to patients with UUI refractory to conservative therapy (such as PFMT and/or drug treatment).
- Warn patients of the limited duration of response, risk of UTI and the possible prolonged need to self-catheterise (ensure that they are willing and able to do so).
- strong

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- SNM involves a test phase with a wire and external stimulator for 1 to 2 weeks, and a second stage with a tined lead and battery if the first one is successful, which is usually defined as more than a 50% improvement in symptoms.


- The test phase has been replaced by a permanent tined lead with a longer test phase for 2 to 4 weeks that is placed percutaneously under fluoroscopy in the S₃ sacral foramen alongside the sacral nerve, then if the results were satisfactory, the battery will be implanted as a second stage.


- The mechanism of action of SNM is not clear; however, it is believed that it modulates the nerves supplying the bladder. The battery is changed every 5 to 7 years, on average, depending on the amount of use. The cure rate of UUI is 39%, and an improvement of greater than 50% is seen in 67% of patients. Long-term success has been evaluated with more than 10 years' follow-up with sustained results.


Recommendations

- Offer sacral nerve modulation to patients who have UUI refractory to antimuscarinic therapy.
- strong

- PTNS, on the other hand, although licensed for OAB in some countries, does not seem to offer the same degree of benefit as Botox or SNM, and therefore PTNS is not widely used. The response rate is 54% to 81%.
- PTNS involves inserting a needle into the ankle on the tibial nerve to electrically stimulate the sacral micturition center via the S2-S4 sacral nerve plexus.


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- It is administered as 30-minute sessions, once per week for 12 weeks, and then it is maintained after that at once per month.
 - In theory, this treatment can be self-administered if the patients are taught how to do it. The cost is higher than antimuscarinics therapy and there are no long-term outcome data available.

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- If these minimally invasive treatments fail and the patient continues to be bothered by symptoms, then the only treatments remaining are major surgical operations, unless the patient prefers to use containment products such as pads or a permanent suprapubic catheter.

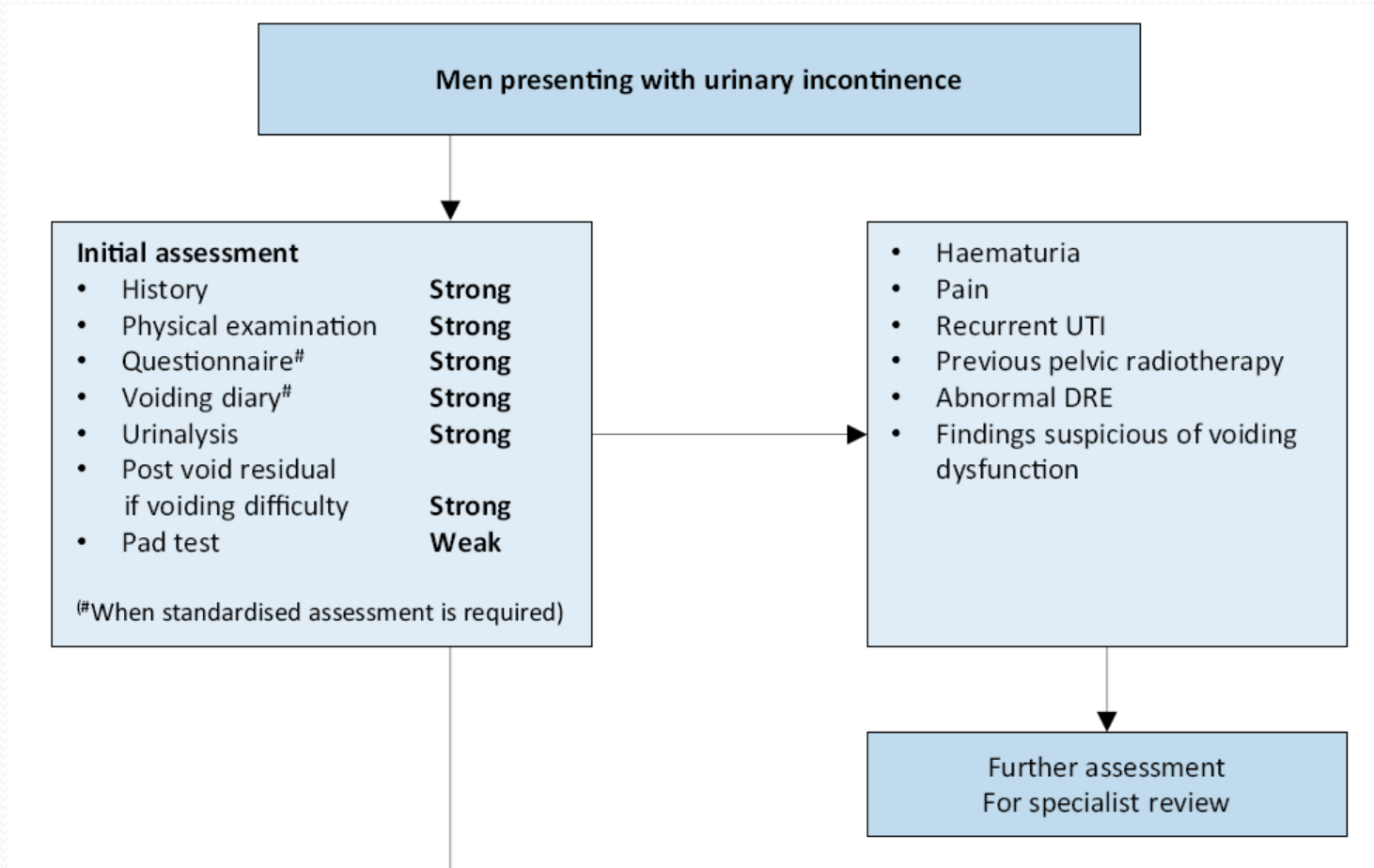
- 
- **Surgical options include augmentation cystoplasty, in its various forms, or an ileal conduit with or without a subtotal cystectomy. In adults, autoaugmentation is no longer recommended for the treatment of DO because of the poor long-term success of this procedure resulting from complications .**

Recommendations

- Offer augmentation cystoplasty to patients with UI who have failed all other treatment options.
- Inform patients undergoing augmentation cystoplasty of the high risk of having to perform clean intermittent self-catheterisation (ensure they are willing and able to do so) and that they need lifelong surveillance.
- weak

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- Do not offer detrusor myectomy as a treatment for UI.
 - Only offer urinary diversion to patients who have failed less invasive therapies for the treatment of UI and who will accept a stoma and have been warned about the possible small risk of malignancy.
 - weak

Management and treatment of men presenting with urinary incontinence



Urgency incontinence

Advise on bowel function, drugs, co-morbidity, fluid intake
Advise on weight loss
Offer pads or other containment device if needed
Offer timed or prompted voiding in elderly/care-dependent people

Strong
Strong
Strong
Strong

Stress predominant

Urgency predominant

Antimuscarinics
Strong
or mirabegron
Strong

Failed conservative or drug therapy

Consider urodynamics and lower urinary tract assessment
Strong

Urgency
incontinence

Advise onabotulinumtoxin A
or
sacral nerve stimulation
Strong*

Bladder augmentation or
urinary diversion
Weak

