

# EAU GUIDELINES ON URINARY INCONTINENCE

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## Introduction

This pocket version aims to synthesise the important clinical messages described in the full text and is presented as a series of 'action based recommendations' with a strength rating.

## Diagnostic Evaluation

### History and physical examination

The history should include details of the type, timing and severity of urinary incontinence (UI), associated voiding and other urinary symptoms. The history should allow UI to be categorised into stress urinary incontinence (SUI), urgency urinary incontinence (UUI) or mixed urinary incontinence (MUI).

It should also identify patients who need rapid referral to an appropriate specialist. These include patients with associated pain, haematuria, a history of recurrent urinary tract infection (UTI), pelvic surgery (particularly prostate surgery) or radiotherapy, constant leakage suggesting a fistula, voiding difficulty or suspected neurological disease. The patient should also be asked about other ill health and for the details of current medications, as these may impact on symptoms of UI.

## Questionnaires

Recommendation	Strength rating
Use a validated and appropriate questionnaire when standardised assessment is required.	Strong

## Voiding diaries

Recommendations	Strength rating
Ask patients with UI to complete a voiding diary.	Strong
Use a diary duration of at least three days.	Strong

## Urinalysis and urinary tract infection

Recommendations	Strength rating
Perform urinalysis as a part of the initial assessment of a patient with UI.	Strong
If a symptomatic urinary tract infection is present with UI, reassess the patient after treatment.	Strong
Do not routinely treat asymptomatic bacteriuria in elderly patients to improve UI.	Strong

## Post-voiding residual volume

Recommendations	Strength rating
When measuring post-void residual (PVR) urine volume, use ultrasound.	Strong
Measure (PVR) in patients with UI who have voiding symptoms.	Strong

Measure (PVR) when assessing patients with complicated UI.	Strong
Monitor PVR in patients receiving treatments that may cause or worsen voiding dysfunction, including surgery for SUI.	Strong

## Urodynamics

Recommendations	Strength rating
<b>(NB: Concerning only neurologically intact adults with UI)</b>	
<p>When performing urodynamics in patients with UI adhere to 'Good Urodynamic Practice' standards as described by the International Continence Society:</p> <ul style="list-style-type: none"> <li>• attempt to replicate the patient's symptoms;</li> <li>• check recordings for quality control;</li> <li>• interpret results in the context of the clinical problem;</li> <li>• remember there may be physiological variability within the same individual.</li> </ul>	Strong
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

## Pad testing

Recommendations	Strength rating
Use a pad test of standardised duration and activity protocol.	Strong
Use a pad test when quantification of UI is required.	Weak

## Imaging

Recommendation	Strength rating
Do not routinely carry out imaging of the upper or lower urinary tract as part of the assessment of UI.	Strong

## Disease Management

### Conservative management

In clinical practice, it is a convention that non-surgical therapies are tried first because they usually carry the least risk of harm. Conventional medical practice encourages the use of simple, relatively harmless, interventions before resorting to those associated with higher risks.

### Simple medical interventions

*Correction of underlying disease/cognitive impairment*

Urinary incontinence, especially in the elderly, has been associated with multiple comorbid conditions including:

- 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.

### Adjustment of medication

Although changing drug regimens for underlying disease may be considered as a possible early intervention for UI, there is very little evidence of benefit. There is also a risk that stopping or altering medication may result in more harm than benefit.

Recommendations	Strength rating
Take a drug history from all patients with UI.	Strong
Review any new medication associated with the development or worsening of UI.	Weak

### Constipation

Studies have shown strong associations between constipation and UI. Constipation can be improved by behavioural, physical and medical treatments.

Recommendation	Strength rating
Advise adults with UI who also suffer from constipation about bowel management, in line with good medical practice.	Strong

### Containment (pads etc.)

Recommendations	Strength rating
Inform adults with UI and/or their carers regarding available treatment options before deciding on containment alone.	Strong
Offer incontinence pads and/or containment devices for management of UI.	Strong

### Lifestyle interventions

Examples of lifestyle factors that may be associated with UI

include obesity, smoking, level of physical activity and diet. Modification of these factors may improve UI.

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

## Behavioural and physical therapies

<b>Recommendations</b>	<b>Strength rating</b>
Offer prompted voiding for adults with incontinence, who are cognitively impaired.	Strong
Offer bladder training as a first-line therapy to adults with UI or MUI.	Strong
Offer supervised intensive pelvic floor muscle training (PFMT), lasting at least three months, as a first-line therapy to women with SUI or MUI (including the elderly and post-natal).	Strong
Offer instruction on PFMT to men undergoing radical prostatectomy to speed-up recovery from UI.	Strong
Ensure that PFMT programmes are as intensive as possible.	Strong

Do not offer electrical stimulation with surface electrodes (skin, vaginal, anal) alone for the treatment of SUI.	Strong
Do not offer magnetic stimulation for the treatment of UI or overactive bladder in women.	Strong
Consider percutaneous tibial nerve stimulation as an option for improvement of UUI in women who have not benefited from antimuscarinic medication.	Strong

## Conservative therapy in MUI

Recommendation	Strength rating
Treat the most bothersome symptom first in patients with MUI.	Weak

## Pharmacological Management

### Antimuscarinics

Recommendations	Strength rating
Offer antimuscarinic drugs for adults with UUI who failed conservative treatment.	Strong
Consider extended release formulations of antimuscarinics drugs, whenever possible.	Strong
If an antimuscarinic treatment proves ineffective, consider dose escalation or offering an alternative antimuscarinic formulation, or mirabegron, or a combination.	Strong

Encourage early review (of efficacy and side effects) of patients on antimuscarinic medication for UUI.	Strong
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## Mirabegron

Recommendation	Strength rating
Offer antimuscarinic drugs or mirabegron to adults with UUI who failed conservative treatment.	Strong

## Antimuscarinic drugs in the elderly

Recommendation	Strength rating
Use long-term antimuscarinic treatment with caution in elderly patients especially those who are at risk of, or have, cognitive dysfunction.	Strong

## Drugs for SUI

Recommendations	Strength rating
Offer Duloxetine in selected patients with symptoms of SUI when surgery is not indicated.	Strong
Initiate and withdraw duloxetine using dose titration because of high risk of adverse events.	Strong



## Oestrogen

Recommendations	Strength rating
Offer long-term vaginal oestrogen therapy to post-menopausal women with UI and symptoms of vulvo-vaginal atrophy.	Strong
In women with a history of breast cancer, the treating oncologist should be consulted.	Weak
Discuss alternative hormone replacement therapies with women taking oral conjugated equine oestrogen as hormone replacement therapy who develop or experience worsening UI.	Strong
Advise women who are taking systemic oestradiol who suffer from UI that stopping the oestradiol is unlikely to improve their UI.	Strong

## Desmopressin

Recommendations	Strength rating
Consider offering desmopressin to patients requiring occasional short-term relief from daytime UI and inform them that this drug is not licensed for this indication.	Strong
Monitor plasma sodium levels in patients on desmopressin.	Strong
Do not use desmopressin for long-term control of UI.	Strong

## Drug treatment in MUI

Recommendations	Strength rating
Treat the most bothersome symptom first in patients with MUI.	Weak
Offer antimuscarinic drugs or beta 3 agonists to patients with urgency-predominant MUI.	Strong
Consider offering duloxetine to patients with MUI unresponsive to other conservative treatments and who are not seeking cure.	Strong

## Surgical Management

The section considers surgical options for the following situations:

- Women with uncomplicated SUI; this means no history of previous surgery, no neurological lower urinary tract dysfunction (LUTD), no bothersome genitourinary prolapse, and those not considering further pregnancy.
- Women with complicated SUI. Neurogenic LUTD is reviewed in the EAU Guidelines on Neuro-urology.
- Associated genitourinary prolapse has been included in these Guidelines in terms of treating the incontinence, but no attempt has been made to comment on treatment of prolapse itself.
- Men with SUI, mainly those with post-prostatectomy incontinence without neurological disease affecting the lower urinary tract.
- Patients with refractory DO (detrusor overactivity) incontinence.

## Women with uncomplicated SUI

<b>Recommendations</b>	<b>Strength rating</b>
Offer a mid-urethral sling, colposuspension or autologous fascial sling to women with uncomplicated SUI.	Strong
Inform women of the unique complications associated with each individual procedure.	Strong
Inform women who are being offered a single-incision sling that long-term efficacy remains uncertain.	Strong
Inform older women with SUI about the increased risks associated with surgery, including the lower probability of success.	Weak
Inform women that any vaginal surgery may have an impact on sexual function, which is generally positive.	Weak
Only offer new devices, for which there is no level 1 evidence base, as part of a structured research programme.	Strong
Only offer adjustable mid-urethral sling as a primary surgical treatment for SUI as part of a structured research programme.	Strong
Offer bulking agents to women with SUI who request a low-risk procedure with the understanding that repeat injections are likely and long-term durability is not established.	Strong

## Women with complicated SUI

Recommendations	Strength rating
Management of complicated SUI should only be offered in expert centres*.	Weak
Base the choice of surgery for recurrent SUI on careful evaluation of the individual patient including multichannel urodynamics and imaging as appropriate.	Weak
Inform women with recurrent SUI that the outcome of a surgical procedure, when used as a second-line treatment, is generally inferior to its use as a first-line treatment, both in terms of reduced efficacy and increased risk of complications.	Weak
Consider secondary synthetic sling, colposuspension or autologous sling as first options for women with complicated SUI.	Weak
Inform women receiving artificial urinary sphincter (AUS) or Adjustable Compression device (ACT <sup>®</sup> ) that although cure is possible, even in expert centres, there is a high risk of complications, mechanical failure, or a need for explantation.	Weak

\* *Expert centres refers to the comments on surgeon volume in the introduction to the surgical chapter.*

## Women with both stress urinary incontinence and pelvic organ prolapse

<b>Recommendations for women requiring surgery for bothersome pelvic organ prolapse who have symptomatic or unmasked SUI.</b>	<b>Strength rating</b>
Offer simultaneous surgery for pelvic organ prolapse and SUI.	Strong
Inform women of the increased risk of adverse events with combined surgery compared to prolapse surgery alone.	Strong
<b>Recommendations for women requiring surgery for bothersome pelvic organ prolapse without symptomatic or unmasked SUI.</b>	
Inform women that there is a risk of developing <i>de novo</i> SUI after prolapse surgery.	Strong
Warn women that the benefit of surgery for SUI may be outweighed by the increased risk of adverse events with combined surgery compared to prolapse surgery alone.	Strong

## Urethral diverticulum

Recommendation	Strength rating
Symptomatic urethral diverticula should be completely surgically removed.	Strong

## Men with SUI

Recommendations	Strength rating
Offer duloxetine only to hasten recovery of continence after prostate surgery but inform the patient about the possible adverse events and that its use is off label for this indication in most European countries.	Weak
Only offer bulking agents to men with mild post-prostatectomy UI who desire temporary relief of UI symptoms.	Weak
Do not offer bulking agents to men with severe post-prostatectomy UI.	Weak
Offer fixed slings to men with mild-to-moderate* post-prostatectomy UI.	Weak
Warn men that severe UI, prior pelvic radiotherapy or urethral stricture surgery, may worsen the outcome of fixed male sling surgery.	Weak
Offer artificial urinary sphincter (AUS) to men with moderate-to-severe post-prostatectomy incontinence.	Weak
Implantation of AUS or ProACT® for men should only be offered in expert centres.	Weak

Warn men receiving AUS or ProACT® that, although cure can be achieved, even in expert centres, there is a high risk of complications, mechanical failure or a need for explantation.	Weak
Do not offer non-circumferential compression device (ProACT®) to men who have had pelvic radiotherapy.	Weak

\* The terms mild and moderate post-prostatectomy UI remain undefined.

## Surgical interventions for refractory detrusor overactivity

### Intravesical injection of botulinumtoxin A

Recommendations	Strength rating
Offer bladder wall injections of onabotulinum toxin A (100 U) to patients with UUI refractory to conservative therapy (such as pelvic floor muscle training and/or drug treatment).	Strong
Warn patients of the limited duration of response, risk of urinary tract infection and the possible prolonged need to self-catheterise (ensure that they are willing and able to do so).	Strong

## Sacral nerve stimulation (neuromodulation)

Recommendation	Strength rating
Offer sacral nerve modulation to patients who have UUI refractory to antimuscarinic therapy.	Strong

## Cystoplasty/urinary diversion

Recommendations	Strength rating
Offer augmentation cystoplasty to patients with UI who have failed all other treatment options.	Weak
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
Do not offer detrusor myectomy as a treatment for UI.	Weak
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



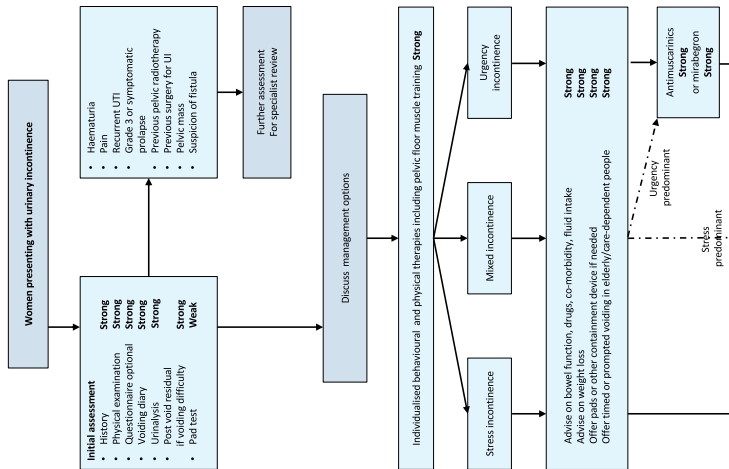
## Surgery in patients with MUI

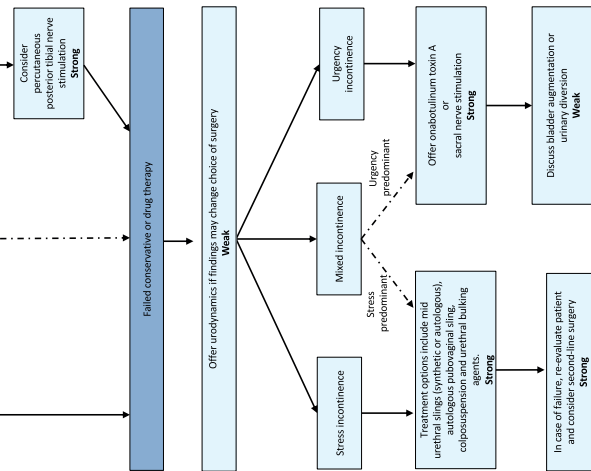
Recommendations	Strength rating
Treat the most bothersome symptom first in patients with MUI.	Weak
Warn patients with MUI that surgery is less likely to be successful than surgery for SUI alone.	Strong
Inform women with MUI that one single treatment may not cure UI; it may be necessary to treat other components of the incontinence problem as well as the most bothersome symptom.	Strong

## Surgery for UI in the elderly

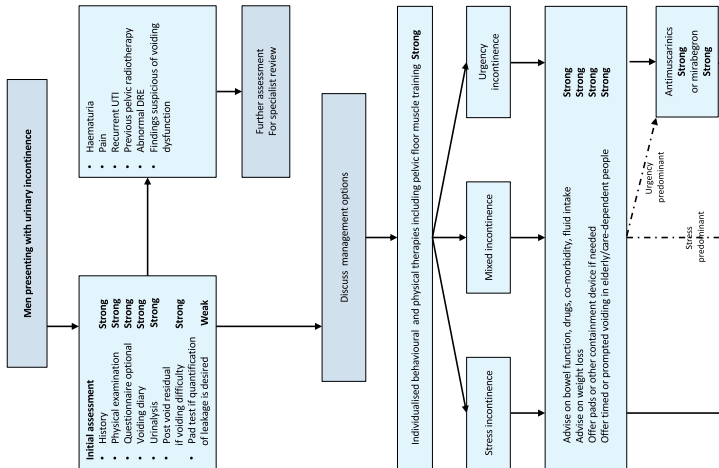
Recommendation	Strength rating
Inform older women with UI about the increased risks associated with surgery (including onabotulinum toxin A injection), together with the lower probability of benefit.	Weak

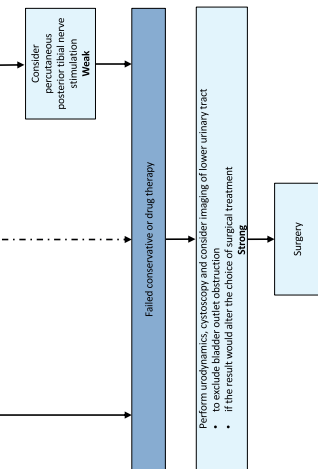
**Figure 1: Women presenting with urinary incontinence**





**Figure 2: Men presenting with urinary incontinence**





## Non Obstetric Urinary Fistula\*

Recommendations	Strength rating
<b>General</b>	
Surgeons undertaking complex pelvic surgery should be competent at identifying, preserving and repairing the ureter.	Weak
Do not routinely use ureteric stents as prophylaxis against injury during routine gynaecological surgery.	Weak
Suspect ureteric injury or fistula in patients following pelvic surgery if a fluid leak or pelvicalyceal dilatation occurs post-operatively or if drainage fluid contains high levels of creatinine.	Weak
Suspect uretero-arterial fistula in patients presenting with haematuria with a history of relevant surgery.	Weak
Use three dimensional imaging techniques to diagnose and localise urinary fistulae.	Weak
Manage upper urinary tract fistulae by conservative or endoluminal technique where such expertise and facilities exists.	Weak
<b>Surgical principles</b>	
Surgeons involved in fistula surgery should have appropriate training, skills, and experience to select an appropriate procedure for each patient.	Weak
Attention should be given as appropriate to skin care, nutrition, rehabilitation, counselling and support prior to, and following, fistula repair.	Weak

If a vesicovaginal fistula is diagnosed within six weeks of surgery, consider indwelling catheterisation for a period of up to twelve weeks after the causative event.	Weak
Tailor the timing of fistula repair to the individual patient and surgeon requirements once any oedema, inflammation, tissue necrosis, or infection, are resolved.	Weak
Where concurrent ureteric re-implantation or augmentation cystoplasty are required, the abdominal approach is necessary.	Weak
Ensure that the bladder is continuously drained following fistula repair until healing is confirmed (expert opinion suggests: 10-14 days for simple and/or post-surgical fistulae; 14-21 days for complex and/or post-radiation fistulae).	Weak
Where urinary and/or faecal diversions are required, avoid using irradiated tissue for repair.	Weak
Use interposition grafts when repair of radiation associated fistulae is undertaken.	Weak
In patients with intractable UI from radiation-associated fistula, where life expectancy is very short, consider performing ureteric occlusion.	Weak
Repair persistent ureterovaginal fistula by an abdominal approach using open, laparoscopic or robotic techniques according to availability and competence.	Weak

Consider palliation by nephrostomy tube diversion and endoluminal distal ureteric occlusion for patients with ureteric fistula associated with advanced pelvic cancer and poor performance status.	Weak
Urethrovaginal fistulae should preferably be repaired by a vaginal approach.	Weak

\* *These recommendations are derived from the ICUD 2013 review and have not been fully validated by the EAU Guidelines Office methodology.*

*This short booklet text is based on the more comprehensive EAU Guidelines (ISBN 978-94-92671-01-1), available to all members of the European Association of Urology at their website, <http://www.uroweb.org/guidelines/>.*