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 'graded 'action based recommendations', which follow the standard for levels of evidence used by the EAU (see Introduction chapter of the EAU Guidelines book ISBN 978-90-79754-80-9).

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	GR
Use a validated and appropriate questionnaire when standardised assessment is required.	B*

** Recommendation based on expert opinion.*

Voiding diaries

Recommendations	GR
Ask patients with urinary incontinence to complete a voiding diary to evaluate co-existing storage and voiding dysfunction.	A
Use a diary duration of between 3 and 7 days.	B

Urinalysis and urinary tract infection

Recommendations	GR
Do urinalysis as a part of the initial assessment of a patient with urinary incontinence.	A*
If a symptomatic urinary tract infection is present with urinary incontinence, reassess the patient after treatment.	A*
Do not routinely treat asymptomatic bacteriuria in elderly patients to improve urinary incontinence.	B

** Recommendation based on expert opinion.*

Post-voiding residual volume

Recommendations	GR
Use ultrasound to measure post-voiding residual.	A
Measure post-voiding residual in patients with urinary incontinence who have voiding symptoms.	B
Measure post-voiding residual when assessing patients with complicated urinary incontinence.	C
Post-voiding residual should be monitored in patients receiving treatments that may cause or worsen voiding dysfunction.	B

Urodynamics

Recommendations	GR
(NB: Concerning only neurologically intact adults with urinary incontinence)	
Clinicians carrying out urodynamics in patients with urinary incontinence should: • ensure that the test replicates the patient's symptoms; • interpret results in the context of the clinical problem; • check recordings for quality control; • remember there may be physiological variability within the same individual.	C
Advise patients that the results of urodynamics may be useful in discussing treatment options, although there is limited evidence that performing urodynamics will predict the outcome of treatment for urinary incontinence.	C
Do not routinely carry out urodynamics when offering conservative treatment for urinary incontinence.	B

Perform urodynamics if the findings may change the choice of invasive treatment.	B
Do not use urethral pressure profilometry or leak point pressure to grade severity of incontinence or predict the outcome of treatment.	C
Urodynamic practitioners should adhere to the standards laid out in the ICS document "Good Urodynamic Practice".	C

Pad testing

Recommendations	GR
Have a standardised duration and activity protocol for pad test.	B
Use a pad test when quantification of urinary incontinence is required.	C
Use repeat pad test after treatment if an objective outcome measure is required.	C

Imaging

Recommendation	GR
Do not routinely carry out imaging of the upper or lower urinary tract as part of the assessment of urinary incontinence.	A

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 resort to those associated with higher risks.

Simple Medical interventions

Correction of Underlying disease/cognitive impairment

Urinary incontinence, especially in the elderly, can be worsened or caused by underlying diseases, especially conditions that cause polyuria, nocturia, increased abdominal pressure or CNS disturbances. These conditions include:

- 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
- obesity.

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	GR
Take a drug history from all patients with urinary incontinence.	A
For women taking oral conjugated equine oestrogen as hormone replacement therapy who develop or worsen urinary incontinence, suggest discussion of alternative hormone replacement therapies with the relevant clinician.	A
Advise women who are taking systemic oestradiol who suffer from urinary incontinence, that stopping the oestradiol is unlikely to improve their incontinence.	A
Review any new medication associated with the development or worsening of urinary incontinence.	C

Constipation

There is no evidence to show whether or not treating constipation improves UI, although both constipation and UI appear to be improved by certain behavioural interventions.

Recommendation	GR
Adults with urinary incontinence who also suffer from constipation should be given advice about bowel management in line with good medical practice.	C

Containment (pads etc)

Recommendations	GR
Ensure that adults with urinary incontinence and/or their carers are informed regarding available treatment options before deciding on containment alone.	A*
Suggest use of disposable insert pads for women and men with light urinary incontinence.	A*

In collaboration with other healthcare professionals with expertise in urinary incontinence help adults with moderate/severe urinary incontinence to select the individually best containment regimen considering pads, external devices and catheters, and balancing benefits and harms.	A*
Choice of pad from the wide variety of different absorbent materials and designs available should be made with consideration of the individual patient's circumstance, degree of incontinence and preference.	B

** Recommendation based on expert opinion.*

Lifestyle Changes

Examples of lifestyle factors that may be associated with incontinence include obesity, smoking, level of physical activity and diet. Modification of these factors may improve UI.

Recommendations	**GR**
Encourage obese women suffering from any urinary incontinence to lose weight (> 5%).	A
Advise adults with urinary incontinence that reducing caffeine intake may improve symptoms of urgency and frequency but not incontinence.	B
Patients with abnormally high or abnormally low fluid intake should be advised to modify their fluid intake appropriately.	C
Counsel female athletes experiencing urinary incontinence with intense physical activity that it will not predispose to urinary incontinence in later life.	C
Patients with urinary incontinence who smoke should be given smoking cessation advice in line with good medical practice.	A

Behavioural and physical therapies

Recommendations	GR
Offer supervised intensive PFMT, lasting at least 3 months, as a first-line therapy to women with stress urinary incontinence or mixed urinary incontinence.	A
PFMT programmes should be as intensive as possible.	A
Offer PFMT to elderly women with urinary incontinence.	B
Consider using biofeedback as an adjunct in women with stress urinary incontinence.	A
Offer instruction on PFMT to men undergoing radical prostatectomy to speed recovery of incontinence.	B
Offer bladder training as a first-line therapy to adults with urgency urinary incontinence or mixed urinary incontinence.	A
Use a trial of prompted voiding for adults with incontinence, who are cognitively impaired.	A
Do not offer electrical stimulation with surface electrodes (skin, vaginal, anal) alone for the treatment of stress urinary incontinence.	A
Consider offering electrical stimulation as an adjunct to behavioural therapy in patients with urgency urinary incontinence.	B
Do not offer magnetic stimulation for the treatment of incontinence or overactive bladder in adult women.	B
Do not offer PTNS to women or men who are seeking a cure for urgency urinary incontinence.	A
Offer, if available, P-PTNS as an option for improvement of urgency urinary incontinence in women who have not benefitted from antimuscarinic medication.	B

Support other healthcare professionals in use of rehabilitation programmes including prompted voiding for care of elderly care-dependent people with urinary incontinence.	A

PFMT = pelvic floor muscle training; P-PTNS = percutaneous posterior tibial nerve stimulation.

Conservative therapy in mixed urinary incontinence

Recommendations	GR
Treat the most bothersome symptom first in patients with mixed urinary incontinence.	C
Warn patients with mixed urinary incontinence that the chance of success of pelvic floor muscle training is lower than for stress urinary incontinence alone.	B

Pharmacological management

Antimuscarinics

Recommendations	GR
Offer IR or ER formulations of antimuscarinic drugs for adults with urgency urinary incontinence.	A
If IR formulations of antimuscarinic drugs are unsuccessful for adults with urgency urinary incontinence, offer ER formulations or longer-acting antimuscarinic agents.	A
Consider using transdermal oxybutynin if oral antimuscarinic agents cannot be tolerated due to dry mouth.	B
Offer and encourage early review (of efficacy and side-effects) of patients on antimuscarinic medication for urgency urinary incontinence (< 30 days).	A

IR = immediate release; ER = extended release.

Antimuscarinic drugs in the elderly

Recommendations	GR
In older people being treated for urinary incontinence, every effort should be made to employ non-pharmacological treatments first.	C
Use antimuscarinic drugs with caution in elderly patients who are at risk of, or have, cognitive dysfunction.	B
In older people who are being prescribed antimuscarinic drugs for control of urinary incontinence, consider modifications to other medications to help reduce anticholinergic load.	C
Check mental function in patients on antimuscarinic medication if they are at risk of cognitive dysfunction.	C

Mirabegron

Recommendation	GR
Offer mirabegron to people with urgency urinary incontinence, but warn patients receiving mirabegron that the possible long-term side effects remain uncertain.	B

Drugs for stress urinary incontinence

Recommendations	GR
Duloxetine should not be offered to women or men who are seeking a cure for their incontinence.	A
Duloxetine can be offered to women or men who are seeking temporary improvement in incontinence symptoms.	B*

Duloxetine should be initiated using dose titration because of high adverse effect rates.	A

** Downgraded based on expert opinion.*

Oestrogen

Recommendations	GR
Offer post-menopausal women with urinary incontinence vaginal oestrogen therapy, particularly if other symptoms of vulvovaginal atrophy are present.	A
Do not offer oral (systemic) oestrogen replacement therapy as treatment for urinary incontinence.	A
Vaginal oestrogen therapy should be long-term and in an appropriate dose.	C

Desmopressin

Recommendations	GR
Offer desmopressin to patients requiring occasional short-term relief from daytime urinary incontinence and inform them that this drug is not licensed for this indication.	B
Do not use desmopressin for long-term control of urinary incontinence.	A

Drug treatment in mixed urinary incontinence

Recommendations	GR
Treat the most bothersome symptom first in patients with mixed urinary incontinence.	C
Offer antimuscarinic drugs to patients with urgency-predominant mixed urinary incontinence.	A*
Consider duloxetine for patients with mixed urinary incontinence unresponsive to other conservative treatments and who are not seeking cure.	B

** Recommendation based on expert opinion.*

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 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 in men with post-prostatectomy incontinence without neurological disease affecting the lower urinary tract.
- Patients with refractory DO incontinence.

Women with uncomplicated stress urinary incontinence

Recommendations for surgery for uncomplicated stress urinary incontinence in women	GR
Offer the mid-urethral sling to women with uncomplicated stress urinary incontinence as the preferred surgical intervention whenever available.	A
Warn women who are being offered a retropubic insertion of midurethral sling about the relatively higher risk of peri-operative complications compared to transobturator insertion.	A
Warn women who are being offered transobturator insertion of mid-urethral sling about the higher risk of pain and dyspareunia in the longer term.	A
Warn women who are being offered a single-incision sling that long-term efficacy remains uncertain.	A
Do a cystoscopy as part of retropubic insertion of a mid-urethral sling, or if difficulty is encountered during transobturator sling insertion, or if there is a significant cystocele.	C
Offer colposuspension (open or laparoscopic) or autologous fascial sling to women with stress urinary incontinence if mid-urethral sling cannot be considered.	A
Warn women undergoing autologous fascial sling that there is a high risk of voiding difficulty and the need to perform clean intermittent self-catheterisation; ensure they are willing and able to do so.	C
Inform older women with stress urinary incontinence about the increased risks associated with surgery, including the lower probability of success.	B

Inform women that any vaginal surgery may have an impact on sexual function.	B
Only offer new devices, for which there is no level 1 evidence base, as part of a structured research programme.	A*
Only offer adjustable mid-urethral sling as a primary surgical treatment for stress urinary incontinence as part of a structured research programme.	A*
Do not offer bulking agents to women who are seeking a permanent cure for stress urinary incontinence.	A*

** Recommendation based on expert opinion.*

Complicated stress urinary incontinence in women

Recommendations for surgery for complicated stress urinary incontinence in women	**GR**
The choice of surgery for recurrent stress urinary incontinence should be based on careful evaluation of the individual patient including video-urodynamics.	C
Warn women with recurrent stress urinary incontinence, 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.	C
Consider secondary synthetic sling, colposuspension or autologous sling as first options for women with complicated stress urinary incontinence.	C
Implantation of AUS or ACT for women with complicated stress urinary incontinence should only be offered in expert* centres.	C
Warn women receiving AUS or ACT that, even in expert centres, there is a high risk of complications, mechanical failure or a need for explantation.	C

AUS = artificial urinary sphincter; ACT = adjustable compression therapy.
** Expert centres refers to the comments on surgeon volume in the introduction to the surgical chapter in the full text Guideline.*

Women with both stress urinary incontinence and pelvic organ prolapse

Recommendations for women requiring surgery for bothersome POP who have symptomatic or unmasked stress urinary incontinence	**GR**
Offer simultaneous surgery for POP and stress urinary incontinence.	A
Warn women of the increased risk of adverse events with combined surgery compared to prolapse surgery alone.	A
Recommendations for women requiring surgery for bothersome POP without symptomatic or unmasked stress urinary incontinence	**GR**
Warn women that there is a risk of developing de novo stress urinary incontinence after prolapse surgery.	A
Inform women that the benefit of prophylactic stress urinary incontinence surgery is uncertain.	C
Warn women that the benefit of surgery for stress urinary incontinence may be outweighed by the increased risk of adverse events with combined surgery compared to prolapse surgery alone.	A

POP = pelvic organ prolapse.

Urethral diverticulum

Recommendation	GR
Symptomatic urethral diverticula should be completely surgically removed.	A*

** Recommendation based on expert opinion.*

Men with stress urinary incontinence

Recommendations for surgery in men with stress urinary incontinence	GR
Only offer bulking agents to men with mild post-prostatectomy incontinence who desire temporary relief of incontinence symptoms.	C
Do not offer bulking agents to men with severe post-prostatectomy incontinence.	C
Offer fixed slings to men with mild-to-moderate * post-prostatectomy incontinence.	B
Warn men that severe incontinence, prior pelvic radiotherapy or urethral stricture surgery, may worsen the outcome of fixed male sling surgery.	C
Offer AUS to men with moderate-to-severe post-prostatectomy incontinence.	B
Implantation of AUS or ACT for men should only be offered in expert centres.**	C
Warn men receiving AUS or ACT that, even in expert centres, there is a high risk of complications, mechanical failure or a need for explantation.	C
Do not offer non-circumferential compression devices (ProACT®) to men who have had pelvic radiotherapy.	C

AUS = artificial urinary sphincter; ACT = artificial compression device.

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

*** Expert centres refers to the comments on surgeon volume in the introduction to the surgical chapter in the full text Guideline.*

Surgical interventions for refractory detrusor overactivity

Intravesical injection of botulinumtoxin A

Recommendations	GR
Offer bladder wall injections of onabotulinum toxin A (100 units) to patients with urgency urinary incontinence refractory to antimuscarinic therapy.	A
Warn patients of the limited duration of response, risk of UTI and the possible prolonged need to selfcatheterise (ensure that they are willing and able to do so) and risk of UTI.	A

UTI = urinary tract infection.

Sacral nerve stimulation (neuromodulation)

Recommendation	GR
If available, offer sacral nerve modulation to patients, who have urgency urinary incontinence refractory to conservative therapy.	A

Cystoplasty/urinary diversion

Recommendations	GR
Only offer augmentation cystoplasty to patients with detrusor overactivity incontinence who have failed conservative therapy, in whom the possibility of botulinum toxin and sacral nerve stimulation has been discussed.	C
Warn 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.	C
Do not offer detrusor myectomy as a treatment for urinary incontinence.	C
Only offer urinary diversion to patients who have failed less invasive therapies for the treatment of urinary incontinence and who will accept a stoma.	C
Warn patients undergoing augmentation cystoplasty or urinary diversion of the high risk of short-term and long-term complications, and the possible small risk of malignancy.	C
Life-long follow-up is recommended for patients who have undergone augmentation cystoplasty or urinary diversion.	C

Surgery in patients with mixed urinary incontinence

Recommendations	GR
Treat the most bothersome symptom first in patients with mixed urinary incontinence.	C
Warn patients with mixed urinary incontinence that surgery is less likely to be successful than surgery in patients with stress urinary incontinence alone.	A

Warn patients with mixed urinary incontinence that one single treatment may not cure urinary incontinence; it may be necessary to treat other components of the incontinence problem as well as the most bothersome symptom.	A*

** Upgraded following panel consensus.*

Surgery for urinary incontinence in the elderly

Recommendation	GR
Inform older women with urinary incontinence about the increased risks associated with surgery, (including onabotA injection), together with the lower probability of benefit.	B

Non Obstetric Urinary Fistula*

Recommendations	GR
General	
Surgeons undertaking complex pelvic surgery should be competent at identifying, preserving and repairing the ureter.	C
Do not routinely use ureteric stents as prophylaxis against injury during routine gynaecological surgery.	B
Suspect ureteric injury or fistula in patients following pelvic surgery if a fluid leak or pelvicalyceal dilatation occurs postoperatively or if drainage fluid contains high levels of creatinine.	C
Suspect uretero-arterial fistula in patients presenting with haematuria with a history of relevant surgery.	C
Use three dimensional imaging techniques to diagnose and localise urinary fistulae.	C

Manage upper urinary tract fistulae by conservative or endoluminal technique where such expertise and facilities exists.	B
Surgical principles	
Surgeons involved in fistula surgery should have appropriate training, skills, and experience to select an appropriate procedure for each patient.	C
Attention should be given as appropriate to skin care, nutrition, rehabilitation, counselling and support prior to and following fistula repair.	C
if a vesicovaginal fistula is diagnosed within six weeks of surgery, consider indwelling catheterisation for a period of up to 12 weeks after the causative event.	C
Tailor the timing of fistula repair to the individual patient and surgeon requirements once any oedema, inflammation, tissue necrosis, or infection are resolved.	B
Where concurrent ureteric re-implantation or augmentation cystoplasty are required, the abdominal approach is necessary.	C
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).	C
Where urinary and/or faecal diversions are required, avoid using irradiated tissue for repair.	C
Use interposition grafts when repair of radiation associated fistulae is undertaken.	C
In patients with intractable urinary incontinence from radiation-associated fistula, where life expectancy is very short, consider performing ureteric occlusion.	C

Repair persistent ureterovaginal fistula by an abdominal approach using open, laparoscopic or robotic techniques according to availability and competence.	C
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.	C
Urethrovaginal fistulae should preferably be repaired by a vaginal approach.	C

** These recommendations are derived from summarisation of the ICUD 2013 review and have not been fully validated by the EAU guidelines panel methodology.*

This short booklet text is based on the more comprehensive EAU Guidelines (ISBN 978-90-79754-80-9), available to all members of the European Association of Urology at their website, http://www.uroweb.org.

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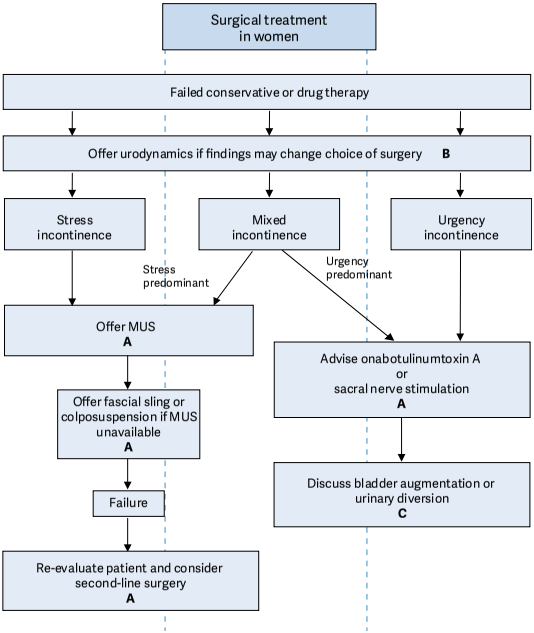
Surgical treatment in women
Failed conservative or drug therapy
Offer urodynamics if findings may change choice of surgery B
Stress incontinence
Mixed incontinence
Urgency incontinence
Stress predominant
Urgency predominant
Offer MUS A
Advise onabotulinumtoxin A or sacral nerve stimulation A
Offer fascial sling or colposuspension if MUS unavailable A
Discuss bladder augmentation or urinary diversion C
Failure
Re-evaluate patient and consider second-line surgery A

** Based on expert opinion.*

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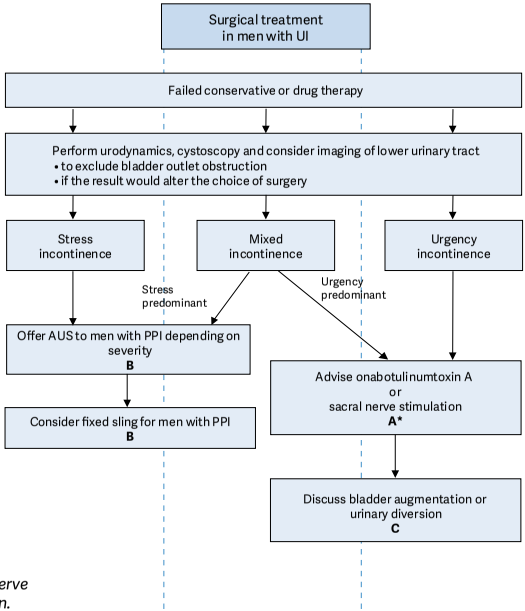

** Available evidence on onabotulinumtoxin A and sacral nerve stimulation refers mainly to women.*