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Advancing Female Pelvic Medicine  
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# COMMITTEE OPINION

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## Committee on Gynecologic Practice American Urogynecologic Society

*This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.*

## Evaluation of Uncomplicated Stress Urinary Incontinence in Women Before Surgical Treatment

**ABSTRACT:** Stress urinary incontinence (SUI) is a condition of involuntary loss of urine on effort, physical exertion, sneezing, or coughing that is often bothersome to the patient and frequently affects quality of life. When women are evaluated for SUI, counseling about treatment should begin with conservative options. The minimum evaluation before primary midurethral sling surgery in women with symptoms of SUI includes the following six steps: 1) history, 2) urinalysis, 3) physical examination, 4) demonstration of stress incontinence, 5) assessment of urethral mobility, and 6) measurement of postvoid residual urine volume. For women with uncomplicated SUI in whom conservative treatment has failed and who desire midurethral sling surgery, evidence indicates that the performance of preoperative multichannel urodynamic testing versus a basic evaluation does not affect treatment outcomes. However, women who have complicated SUI may benefit from multichannel urodynamic testing and other diagnostic tests before initiation of treatment, especially surgery. Clinical judgment should guide the health care provider's decision to perform preoperative multichannel urodynamic testing or to refer to a specialist with appropriate training and experience in female pelvic medicine and reconstructive surgery.

Stress urinary incontinence (SUI) is a condition of involuntary loss of urine on effort, physical exertion, sneezing, or coughing that is often bothersome to the patient and frequently affects quality of life. It is estimated to affect 15.7% of adult women (1). Among women with SUI, 77.5% report their symptoms to be bothersome, and of this group 28.8% report their symptoms to be moderately to extremely bothersome; the degree of bother is associated with the severity of SUI (2).

Treatment options for SUI range from conservative to surgical. Conservative options include pelvic muscle exercises (with or without physical therapy), behavioral modification, continence-support pessaries, and urethral inserts (3). In 2010, approximately 260,000 women in the United States underwent surgical treatment of SUI (4). Surgical treatment options include anti-incontinence procedures, such as retropubic urethropexies, autologous fascial slings, urethral bulking agents, and synthetic midurethral slings. An evaluation of symptoms of SUI needs to be completed before performing surgery. In this joint document, the American College of

Obstetricians and Gynecologists (the College) and the American Urogynecologic Society provide recommendations for the basic evaluation of a patient with symptoms of uncomplicated SUI (Table 1) before primary surgical repair with a midurethral sling.

### Basic Evaluation of Stress Urinary Incontinence

When women are evaluated for SUI, counseling about treatment should begin with conservative options. The minimum evaluation before primary midurethral sling surgery in women with symptoms of SUI includes the following six steps: 1) history, 2) urinalysis, 3) physical examination, 4) demonstration of stress incontinence, 5) assessment of urethral mobility, and 6) measurement of postvoid residual urine volume.

#### History

The purpose of history taking is to determine the type of urinary incontinence (UI) that is bothersome to the patient. Urinary incontinence is commonly classified

**Table 1.** Basic Evaluation Findings for Uncomplicated Versus Complicated Stress Urinary Incontinence ←

Evaluation	Findings	
	Uncomplicated	Complicated
History*	Urinary incontinence associated with involuntary loss of urine on effort, physical exertion, sneezing, or coughing	Symptoms of urgency, incomplete emptying, incontinence associated with chronic urinary retention, functional impairment, or continuous leakage
	Absence of recurrent urinary tract infection	Recurrent urinary tract infection <sup>†</sup>
	No prior extensive pelvic surgery No prior surgery for stress incontinence	Previous extensive or radical pelvic surgery (eg, radical hysterectomy)
		Prior anti-incontinence surgery or complex urethral surgery (eg, urethral diverticulectomy or urethrovaginal fistula repair)
	Absence of voiding symptoms	Presence of voiding symptoms: hesitancy, slow stream, intermittency, straining to void, spraying of urinary stream, feeling of incomplete voiding, need to immediately revoid, postmicturition leakage, position-dependent micturition, and dysuria
	Absence of medical conditions that can affect lower urinary tract function	Presence of neurologic disease, poorly controlled diabetes mellitus, or dementia
Physical examination	Absence of vaginal bulge beyond the hymen on examination Absence of urethral abnormality	Symptoms of vaginal bulge or known pelvic organ prolapse beyond the hymen confirmed by physical examination, presence of genitourinary fistula, or urethral diverticulum
Urethral mobility assessment	Presence of urethral mobility	Absence of urethral mobility
Postvoid residual urine volume	Less than 150 mL	Greater than or equal to 150 mL
Urinalysis/urine culture	Negative result for urinary tract infection or hematuria	

\*A complete list of the patient's medications (including nonprescription medications) should be obtained to determine whether individual drugs may be influencing the function of the bladder or urethra, which leads to urinary incontinence or voiding difficulties.

<sup>†</sup>Recurrent urinary tract infection is defined as three documented infections in 12 months or two documented infections in 6 months.

as stress, urge, postural, continuous (or total), insensible (spontaneous), coital, or incontinence associated with chronic urinary retention (previously referred to as overflow incontinence); nocturnal enuresis; or some combination thereof (5, 6). The history should include questions about the type of incontinence (eg, stress, urge, mixed), precipitating events, frequency of occurrence, severity, pad use, and effect of symptoms on activities of daily living. Questions should be asked to assess symptoms related to bladder storage and emptying functions. Storage symptoms include frequency, nocturia, urgency, and incontinence. Emptying or voiding symptoms include hesitancy, slow stream, intermittency, straining to void, spraying of urinary stream, feeling of incomplete emptying, need to immediately revoid, postmicturition leakage, position-dependent micturition, and dysuria. Health care providers can use validated questionnaires to evaluate bother, severity, and the relative contribution of urge UI and SUI symptoms (Box 1). Patients with uncomplicated SUI will have classic symptoms of

leakage on effort or physical exertion. In contrast, inability to reach the toilet that is associated with urgency indicates the presence of urge UI.

Negative responses to queries regarding symptoms of predominant urgency, incomplete emptying, incontinence associated with chronic urinary retention (previously referred to as overflow incontinence), functional impairment, continuous leakage, and incomplete emptying are consistent with uncomplicated SUI (Table 1). Absence of cognitive impairment typically rules out a functional component to the incontinence, and a lack of continuous leakage in women with recent pelvic surgery or radiation exposure points away from the presence of a fistula.

After the urologic history, thorough medical and neurologic histories should be obtained. Certain conditions, such as diabetes and neurologic disorders, can cause UI. In addition, a complete list of the patient's medications (including nonprescription medications) should be obtained to determine whether individual drugs may be influencing the function of the bladder or urethra, which

### Box 1. Examples of Validated Urinary Incontinence Questionnaires ⇐

- Urogenital Distress Inventory (UDI)\*
- Incontinence Impact Questionnaire (IIQ)\*
- Questionnaire for Urinary Incontinence Diagnosis (QUID)<sup>†</sup>
- Incontinence-Quality of Life Questionnaire (I-QoL)<sup>‡</sup>
- Incontinence Severity Index (ISI)<sup>§</sup>
- International Consultation on Incontinence Questionnaire (ICIQ)<sup>||</sup>

\*Shumaker SA, Wyman JF, Uebersax JS, McClish D, Fantl JA. Health-related quality of life measures for women with urinary incontinence: the Incontinence Impact Questionnaire and the Urogenital Distress Inventory. Continence Program in Women (CPW) Research Group. *Qual Life Res* 1994;3:291–306 and Uebersax JS, Wyman JF, Shumaker SA, McClish DK, Fantl JA. Short forms to assess life quality and symptom distress for urinary incontinence in women: the Incontinence Impact Questionnaire and the Urogenital Distress Inventory. Continence Program for Women Research Group. *Neurourol Urodyn* 1995;14:131–9.

<sup>†</sup>Bradley CS, Rahn DD, Nygaard IE, Barber MD, Nager CW, Kenton KS, et al. The questionnaire for urinary incontinence diagnosis (QUID): validity and responsiveness to change in women undergoing non-surgical therapies for treatment of stress predominant urinary incontinence. *Neurourol Urodyn* 2010;29:727–34.

<sup>‡</sup>Brown JS, Grady D, Ouslander JG, Herzog AR, Varner RE, Posner SF. Prevalence of urinary incontinence and associated risk factors in postmenopausal women. Heart & Estrogen/Progestin Replacement Study (HERS) Research Group. *Obstet Gynecol* 1999;94:66–70.

<sup>§</sup>Sandvik H, Seim A, Vanvik A, Hunskaar S. A severity index for epidemiological surveys of female urinary incontinence: comparison with 48-hour pad-weighing tests. *Neurourol Urodyn* 2000;19:137–45.

<sup>||</sup>Avery K, Donovan J, Peters TJ, Shaw C, Gotoh M, Abrams P. ICIQ: a brief and robust measure for evaluating the symptoms and impact of urinary incontinence. *Neurourol Urodyn* 2004;23:322–30.

leads to UI or voiding difficulties (3). Agents that can affect lower urinary tract function include diuretics, caffeine, alcohol, narcotic analgesics, anticholinergic drugs, antihistamines, psychotropic drugs, alpha-adrenergic blockers, alpha-adrenergic agonists, and calcium-channel blockers. Surgical, gynecologic, and obstetric histories also should be elicited. Findings on history taking that are consistent with a diagnosis of uncomplicated SUI are listed in Table 1. Physical examination and office tests are needed to confirm the uncomplicated SUI diagnosis (see following sections).

### Urinalysis

Urinary tract infections should be identified using urinalysis and treated before initiating further investigation or therapeutic intervention for UI. If the urinalysis result is negative, the patient's condition is still consistent with uncomplicated SUI.

### Physical Examination

The primary purpose of the physical examination is to exclude confounding or contributing factors to the incontinence or its management. A urethral diverticulum (an out-pouching of the urethral lumen) can produce incontinence or postvoid dribbling. Occasionally, vaginal discharge can be confused with urinary incontinence. Extraurethral incontinence, caused by a fistula or ectopic ureter, is rare but can be seen on examination. A lack of such physical findings indicates the patient may have uncomplicated SUI.

Evidence of pelvic organ prolapse (POP) beyond the hymen is consistent with complicated SUI because the prolapse can produce a relative obstruction of the urethra that can impair bladder emptying. Therefore, it is recommended that all pelvic support compartments (anterior, posterior, and apical) be assessed (7, 8). Pelvic organ prolapse can mask or reduce the severity of SUI symptoms; this is referred to as occult, potential, masked, or hidden SUI. When POP is reduced with a nonobstructing pessary or large cotton swabs, SUI may become apparent or worsen (9). If no POP is found beyond the hymen, then the patient's SUI remains uncomplicated.

### Demonstration of Stress Incontinence: Cough Stress Test

Stress urinary incontinence should be objectively demonstrated before any anti-incontinence surgery is performed (10–12). Visualization of fluid loss from the urethra simultaneous with a cough is diagnostic of SUI. Delayed fluid loss is considered a negative cough stress test result and suggests cough-induced detrusor overactivity. The cough stress test can be performed with the patient in the supine position during the physical examination. However, if urine leakage is not observed, the cough stress test needs to be repeated with the patient standing and with a full bladder (or a minimum bladder volume of 300 mL) to maximize test sensitivity. Health care providers often ask patients to come to the office with a full bladder during an initial evaluation so that the cough stress test can be performed before bladder emptying (12).

To perform the cough stress test in the standing position, the patient stands near the examination table with one foot on the table step. The health care provider then bends and separates the labia to visualize the urethral meatus. The patient is then asked to cough while the health care provider directly visualizes the urethra. If no leakage is observed despite patient symptoms of SUI, the health care provider needs to ensure that the patient had a full bladder by measurement of voided urine volume and postvoid residual urine volume by catheterization or bladder ultrasonography. The health care provider may need to retrograde fill the bladder until the patient feels bladder fullness or is holding at least 300 mL of fluid and then repeat the cough stress test. If the standing cough stress test result remains negative

despite patient symptoms of SUI, then multichannel urodynamic testing is recommended.

### Assessment of Urethral Mobility

Anti-incontinence surgery is more successful in women with *urethral mobility*, defined as a 30 degree or greater displacement from the horizontal when the patient is in a supine lithotomy position and straining. The presence of urethral mobility indicates uncomplicated SUI. Lack of urethral mobility is associated with a 1.9-fold increase in the failure rate of midurethral sling treatment of SUI (13). The cotton swab test has been the traditional assessment of urethral mobility (14), but other methods of evaluating urethral mobility include measurement of point Aa of the POP Quantification system, visualization, palpation, and ultrasonography (15–17). Patients who lack urethral mobility may be better candidates for urethral bulking agents rather than sling or retropubic anti-incontinence procedures.

### Postvoid Residual Urine Volume

In the Value of Urodynamic Evaluation trial, only women with a postvoid residual urine volume of less than 150 mL were included in the study as meeting the *a priori* definition of uncomplicated SUI (11). The presence of an elevated postvoid residual urine volume can indicate a bladder-emptying abnormality or incontinence associated with chronic urinary retention (previously referred to as overflow incontinence). An elevated postvoid residual urine volume in the absence of POP is uncommon and should trigger an evaluation of the bladder-emptying mechanism, usually with a pressure-flow urodynamic study.

### Multichannel Urodynamic Testing

Preoperative multichannel urodynamic testing is not necessary before planning primary anti-incontinence surgery in women with uncomplicated SUI, as indicated by observed urinary leakage from the urethra by provocative stress measures, a normal urinalysis result (without urinary tract infection), no POP beyond the hymen, and a normal postvoid residual urine volume. Randomized controlled trial results have demonstrated that in women with uncomplicated SUI, outcomes 1 year after midurethral sling surgery were the same for those who had a basic office assessment performed by trained pelvic floor health care providers compared with those who had a preoperative evaluation that included urodynamic testing (11). However, women who have complicated SUI (Table 1) may benefit from multichannel urodynamic testing and other diagnostic tests before initiation of treatment, especially surgery. Determination of the need for additional diagnostic testing before surgery should be based on clinical judgment after completion of the basic UI evaluation outlined in this document. Clinical judgment should guide the health care provider's decision to perform preoperative multichannel urodynamic testing or to refer the patient to a specialist with appropriate

training and experience in female pelvic medicine and reconstructive surgery.

### Conclusions and Recommendations

Stress urinary incontinence is common in women, and obstetrician–gynecologists play an important role in its diagnosis and treatment. The College and the American Urogynecologic Society recommend performance of the following basic six-step evaluation of a patient with symptoms of uncomplicated SUI before primary surgical repair with a midurethral sling:

1. History
2. Urinalysis
3. Physical examination with an assessment for POP
4. Cough stress test
5. Assessment of urethral mobility
6. Measurement of postvoid residual urine volume

For women with uncomplicated SUI in whom conservative treatment has failed and who desire midurethral sling surgery, evidence indicates that the performance of preoperative multichannel urodynamic testing versus a basic evaluation does not affect treatment outcomes (11). However, women with complicated SUI may benefit from additional diagnostic evaluation with multichannel urodynamic testing, particularly before surgical treatment. In these women, the results of the basic six-step evaluation and clinical judgment should guide the decision to perform preoperative multichannel urodynamic testing.

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