Basic Evaluation Of the Incotinent Female Patient

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INTRODUCTION

It is estimated that nearly 50 percent of adult women experience urinary incontinence, and only 25 to 61 percent of symptomatic community-dwelling women seek care. Patients may be reluctant to initiate discussions about their incontinence and urinary symptoms due to embarrassment, lack of knowledge about treatment options, and/or fear of surgery.

Impact On Health

- Quality of life
- Sexual dysfunction
- Morbidity
- Increased caregiver burden

Risk factors

- Age
- Obesity
- Parity
- Mode of delivery
- Family history
- Ethnicity/race
- Others – Smoking, caffeine intake, diabetes, stroke, depression, fecal incontinence, genitourinary syndrome of menopause/vaginal atrophy, hormone replacement therapy, genitourinary surgery (eg, hysterectomy), and radiation

Classification

The main types of urinary incontinence:

- Stress
- Urgency
- mixed incontinence
- overflow incontinence

Classification

Stress incontinence: leakage of urine that occurs with increases in intraabdominal pressure in the absence of a bladder contraction

- Urethral hypermobility
- Intrinsic sphincteric deficiency

Classification

Urgency incontinence: urge to void immediately preceding or accompanied by involuntary leakage of urine

- Idiopathic
- secondary to neurologic disorders,bladder abnormalities, increased or altered bladder microbiome

Classification

Mixed incontinence: both stress and urgency incontinence

Classification

Overflow incontinence: continuous urinary leakage or dribbling in the setting of incomplete bladder emptying

- Detrusor underactivity (age , smooth muscle damage from chronic or severe acute sustained overdistention of the bladder, Fowler's syndrome, fibrosis, low estrogen state, peripheral neuropathy and damage to the spinal cord (eg, multiple sclerosis, spinal stenosis)
- Bladder outlet obstruction

Transient causes of incontinence (DIAPPERS)

- Delirium(acute or subacute confusional state)
- Infection((symptomatic with frequency, urgency, dysuria, etc)
- Atrophic vaginitis /urethritis
- Pharmacologic
- Psychologic
- Endocrine (hyperglycemia, hypercalcemia)
- Restricted mobility
- Stool impaction

Other contributing factors/conditions

- Other urologic/gynecologic disorders : urogenital fistulas, urethral diverticula, and ectopic ureters
- Systemic causes: neurologic disorders, cancer
- Functional incontinence

Highly Recommended Tests During Initial Evaluation

- ✓ ***History and General Assessment***
- ✓ ***Physical Examination***
- ✓ ***Urinalysis***

International Consultation on Incontinence(ICI) Guidelines Basic Evaluation Of the Incotinent Female

- ✓ ***History & general assessment***
  - ***Duration of symptoms***
  - ***Previous surgical procetures***
  - ***Environmental issues***
  - ***Patient mobility***
  - ***Mental status***
  - ***Disease status***
  - ***Patient medication***
  - ***Patient goals***
  - ***Patient expectations***
  - ***Fitness for surgery***

The 3 incontinence questionnaire (3IQ)

1. During the last three months, have you leaked urine (even a small amount)?

   ☐ Yes ☐ No → *Questionnaire completed*

2. During the last three months, did you leak urine:
   (Check all that apply)

   ☐ a. When you were performing some physical activity, such as coughing, sneezing, lifting, or exercise?

   ☐ b. When you had the urge or the feeling that you needed to empty your bladder, but you could not get to the toilet fast enough?

   ☐ c. Without physical activity and without a sense of urgency?

3. During the last three months, did you leak urine *most often*:
   (Check only one)

   ☐ a. When you were performing some physical activity, such as coughing, sneezing, lifting, or exercise?

   ☐ b. When you had the urge or the feeling that you needed to empty your bladder, but you could not get to the toilet fast enough?

   ☐ c. Without physical activity and without a sense of urgency?

   ☐ d. About equally as often with physical activity as with a sense of urgency?

Definitions of type of urinary incontinence are based on responses to question 3:

Response to question 3	Type of incontinence
a. Most often with physical activity	Stress only or stress predominant
b. Most often with the urge to empty the bladder	Urge only or urge predominant
c. Without physical activity or sense of urgency	Other cause only or other cause predominant
d. About equally with physical activity and sense of urgency	Mixed

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Sandvik Severity Score

How often do you experience urine leakage?

0= Never
1=Less than once a month
2=One or several times a month
3=one or several times a week
4=Every day and/or night

How much urine do you lose each time?

1=Drops or little
2=More

0=NO UI

1-2=Slight

3-4=Moderate

6-8=Severe

Key components of the history include:

- ✓ Lower urinary tract symptoms which occur suddenly, in the absence of symptoms of an acute urinary tract infection, may indicate neurological or neoplastic causes.
- ✓ Leakage frequency, volume, timing, and associated symptoms (eg, urgency, effort maneuvers, urinary frequency, nocturia, hesitancy, interrupted voiding, incomplete emptying, straining to empty, sense of warning).
- ✓ Precipitants (eg, caffeinated beverages, alcohol, physical activity, cough, laughing, sound of water, placing hands in water).

Medications

Effect of selected medicines and other agents on bladder function

	Medicines and other agents	Effect on bladder function
Allergy		
Antihistamines	First-generation H_1 receptor antagonists (eg, brompheniramine, chlorpheniramine, clemastine, cyproheptadine, dimenhydrinate, diphenhydramine, hydroxyzine, others)	Decreased contractility via anticholinergic effect
Decongestants	Pseudoephedrine, phenylephrine	Increased urethral sphincter tone
Analgesic and sedative		
Benzodiazepines	Chlordiazepoxide, clonazepam, temazepam, triazolam, others	Impaired micturition via muscle relaxant effect
Opioids	Codeine, meperidine, morphine, oxycodone, others	Decreased sensation of fullness and increased urethral sphincter tone
Anticholinergic*		
Antimuscarinics (overactive bladder medications)	Darifenacin, fesoterodine, oxybutynin, solifenacin, tolterodine, trospium	Decreased contractility via anticholinergic effect
Spasmolytic	Dicyclomine, hyoscyamine, glycopyrrolate, methscopolamine, propantheline, scopolamine (hyoscine)	Decreased contractility via anticholinergic effect
Anticholinergics (antiparkinson medications)	Benztropine, trihexyphenidyl	Decreased contractility via anticholinergic effect
Cardiology¶		
ACE inhibitors	Enalapril, lisinopril, ramipril, others	Decreased contractility; chronic coughing
Alpha-agonists	Midodrine, phenylephrine, vasopressors (various)	Increased urethral sphincter tone
Alpha $_1$-blockers	Alfuzosin, doxazosin, prazosin, silodosin, tamsulosin, terazosin	Decreased urethral sphincter tone
Antiarrhythmic	Disopyramide, flecainide	Decreased contractility via local anesthetic effect on bladder mucosa or anticholinergic effect
Diuretics	Various	Increased urine production, contractility, or rate of emptying
Psychotropic		
Antidepressants	SNRIs: duloxetine, reboxetine$^{\Delta}$	Increased urethral sphincter tone
	Tricyclic antidepressants (amitriptyline, clomipramine, desipramine, doxepin, imipramine, nortriptyline, others)	Decreased contractility via anticholinergic effect
Antipsychotics	First-generation (chlorpromazine, fluphenazine, methotrimeprazine); second-generation (clozapine, olanzapine, risperidone); others have lower effect	Mixed effects described; decreased contractility via anticholinergic effect; increased micturition and stress incontinence via stimulation of alpha $_1$ receptors and/or central dopaminergic receptors
Other		
Skeletal muscle relaxants	Orphenadrine, tizanidine (also cyclobenzaprine, baclofen, and methocarbamol; but effect is lower)	Decreased contractility via anticholinergic effect
Estrogens	Oral estrogens (hormone replacement therapy)	Increased urinary incontinence
Beta $_3$-agonist	Mirabegron	Decreased contractility via beta $_3$-adrenergic effect
Alcohol		Decreased contractility
Caffeine		Increased contractility or rate of emptying

ACE: angiotensin-converting enzyme; SNRIs: serotonin-norepinephrine reuptake inhibitors; BPH: benign prostatic hyperplasia.
* Inhaled antimuscarinic bronchodilators (eg, ipratropium, tiotropium) and ophthalmic drops (eg, atropine, cyclopentolate) can be absorbed systemically in varying degrees; urinary retention has been rarely associated with their use particularly among older adults, men with BPH, and administration of inhaled anticholinergic drug by nebulizer.
¶ Increased micturition reported by ≤3% of patients in clinical studies of calcium channel blockers; mixed effects have been described.
Δ Not available in the United States.

Prepared with data from:

1. *Verhamme K, Sturkenboom M, Stricker B, et al. Drug induced urinary retention. Drug Saf 2008; 31:373.*
2. *Zyczynski H, Parekh M, Kahn M, et al. Urinary incontinence in women. American Urogynecologic Society (2012); available at http://eguideline.guidelinecentral.com/i/76622-augs-urinary-incontinence*

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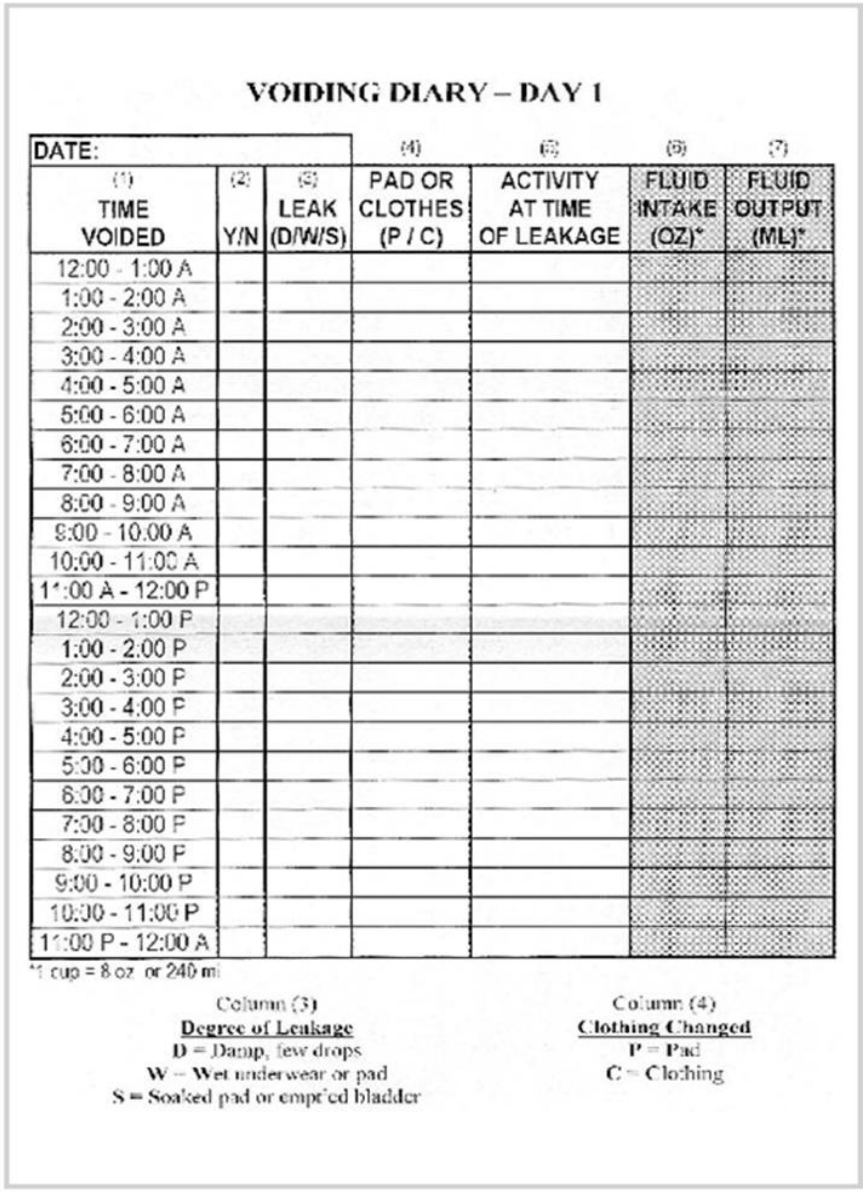
Voiding diaries

- Urinary incontinence is associated with high fluid intake
- A measure of the severity of the problem
- Identify the maximum bladder capacity
- Time interval that the woman can reasonably wait between voids, a measure used to guide bladder training



VOIDING DIARY – DAY 1

DATE:

(1) TIME VOIDED	(2) Y/N	(3) LEAK (D/W/S)	(4) PAD OR CLOTHES (P / C)	(5) ACTIVITY AT TIME OF LEAKAGE	(6) FLUID INTAKE (OZ)*	(7) FLUID OUTPUT (ML)*
12:00 - 1:00 A						
1:00 - 2:00 A						
2:00 - 3:00 A						
3:00 - 4:00 A						
4:00 - 5:00 A						
5:00 - 6:00 A						
6:00 - 7:00 A						
7:00 - 8:00 A						
8:00 - 9:00 A						
9:00 - 10:00 A						
10:00 - 11:00 A						
11:00 A - 12:00 P						
12:00 - 1:00 P						
1:00 - 2:00 P						
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8:00 - 9:00 P						
9:00 - 10:00 P						
10:00 - 11:00 P						
11:00 P - 12:00 A						

*1 cup = 8 oz or 240 ml

Column (3)
Degree of Leakage
D = Damp, few drops
W = Wet underwear or pad
S = Soaked pad or emptied bladder

Column (4)
Clothing Changed
P = Pad
C = Clothing

Impact on quality of life

Patient global impression of improvement

GPI: Global perception of improvement
Overall, do you feel that you are:
❑ Much better
❑ Better
❑ About the same
❑ Worse
❑ Much worse
PGIS: Patient global impression of severity
1. Check the one box that describes how your urinary tract condition is now:
❑ Normal
❑ Mild
❑ Moderate
❑ Severe
PGI-I: Patient global impression of improvement
2. Check the one box that best describes how your urinary tract condition is now, compared with how it was before you began taking medication in this study:
❑ Very much better
❑ Much better
❑ A little better
❑ No change
❑ A little worse
❑ Much worse
❑ Very much worse

Source: Yalcin I, Bump RC. Validation of two global impression questionnaires for incontinence. Am J Obstet Gynecol 2003; 189:98.

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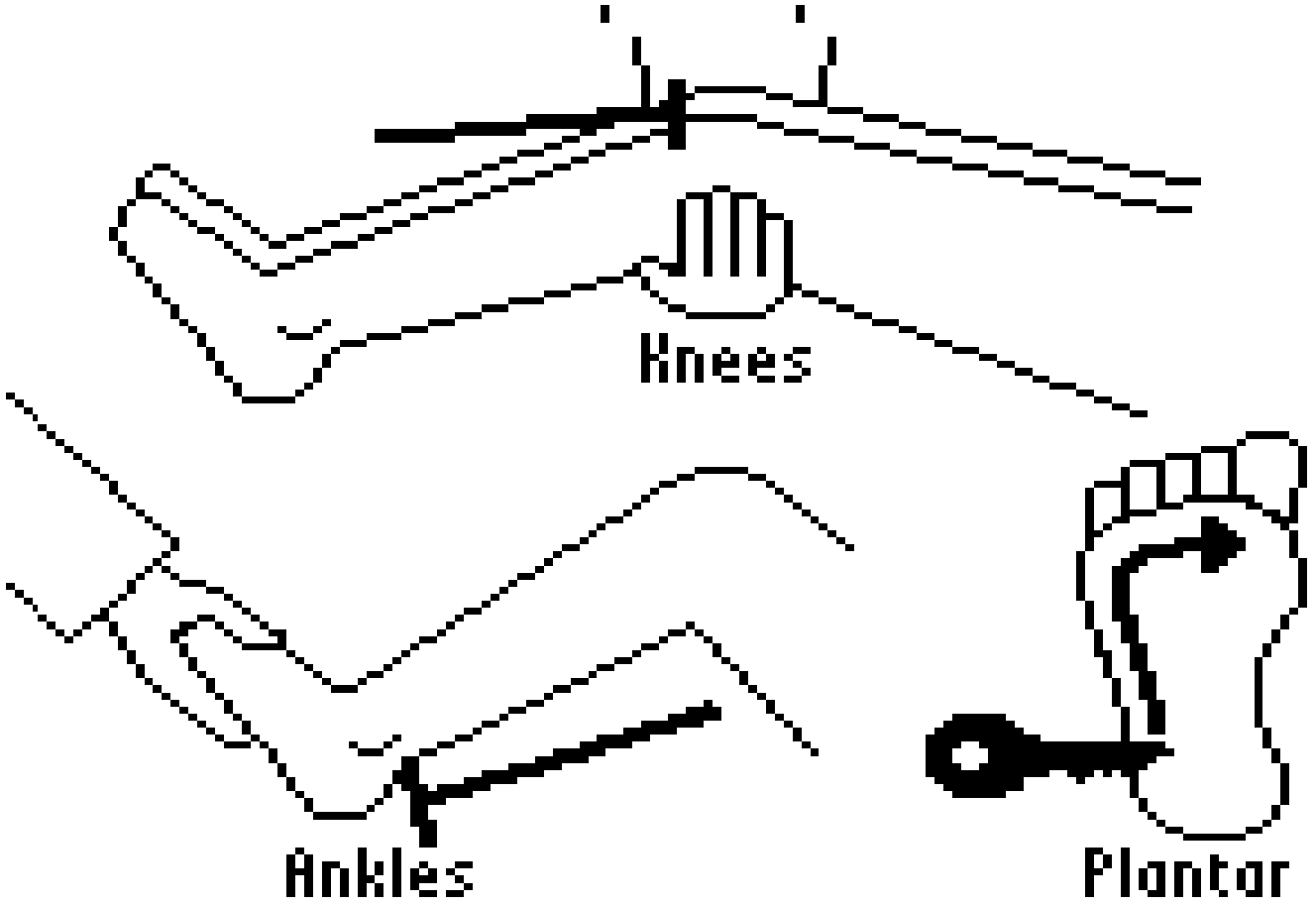
Physical examination

- General physical examination
- Abdominal examination
- Pelvic examination
- Assess estrogen status
- Neurologic examination

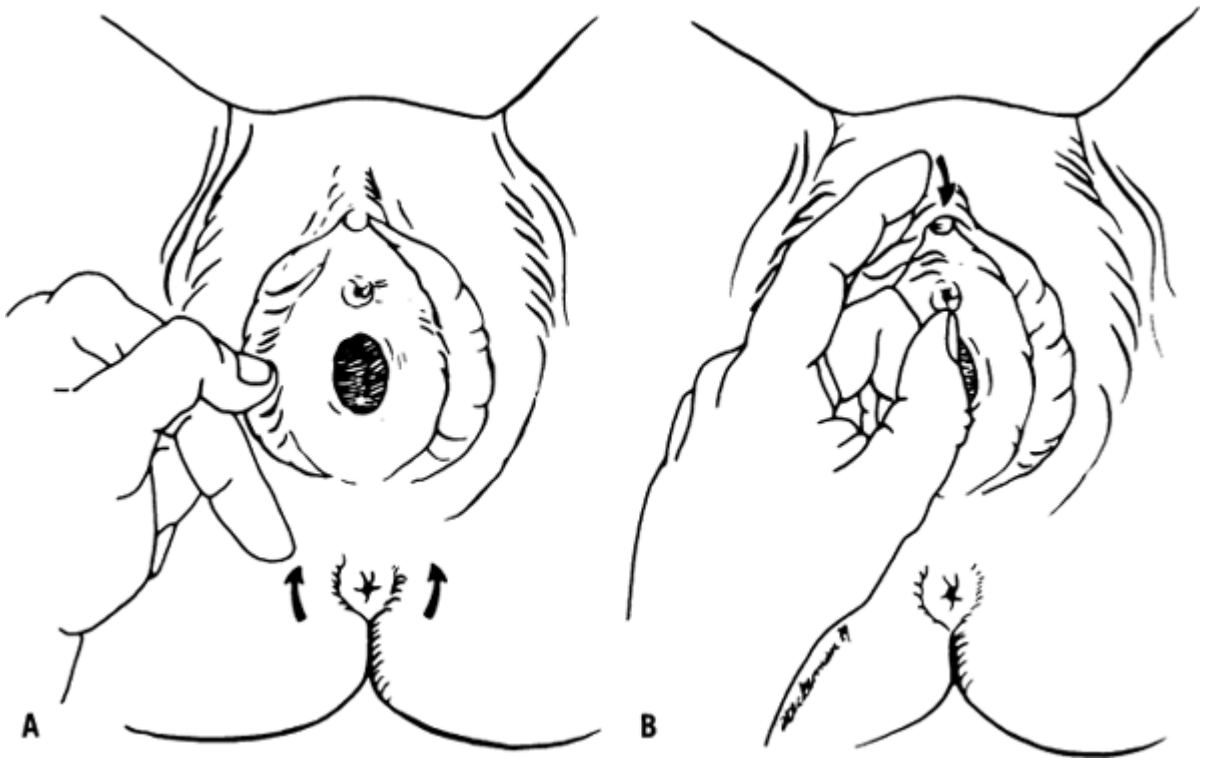
Neurologic examination

- Deep tendon reflex testing of the lower extremities
- Assessment of perineal sensation
- Clitoral reflex
- Anal sphincter reflex

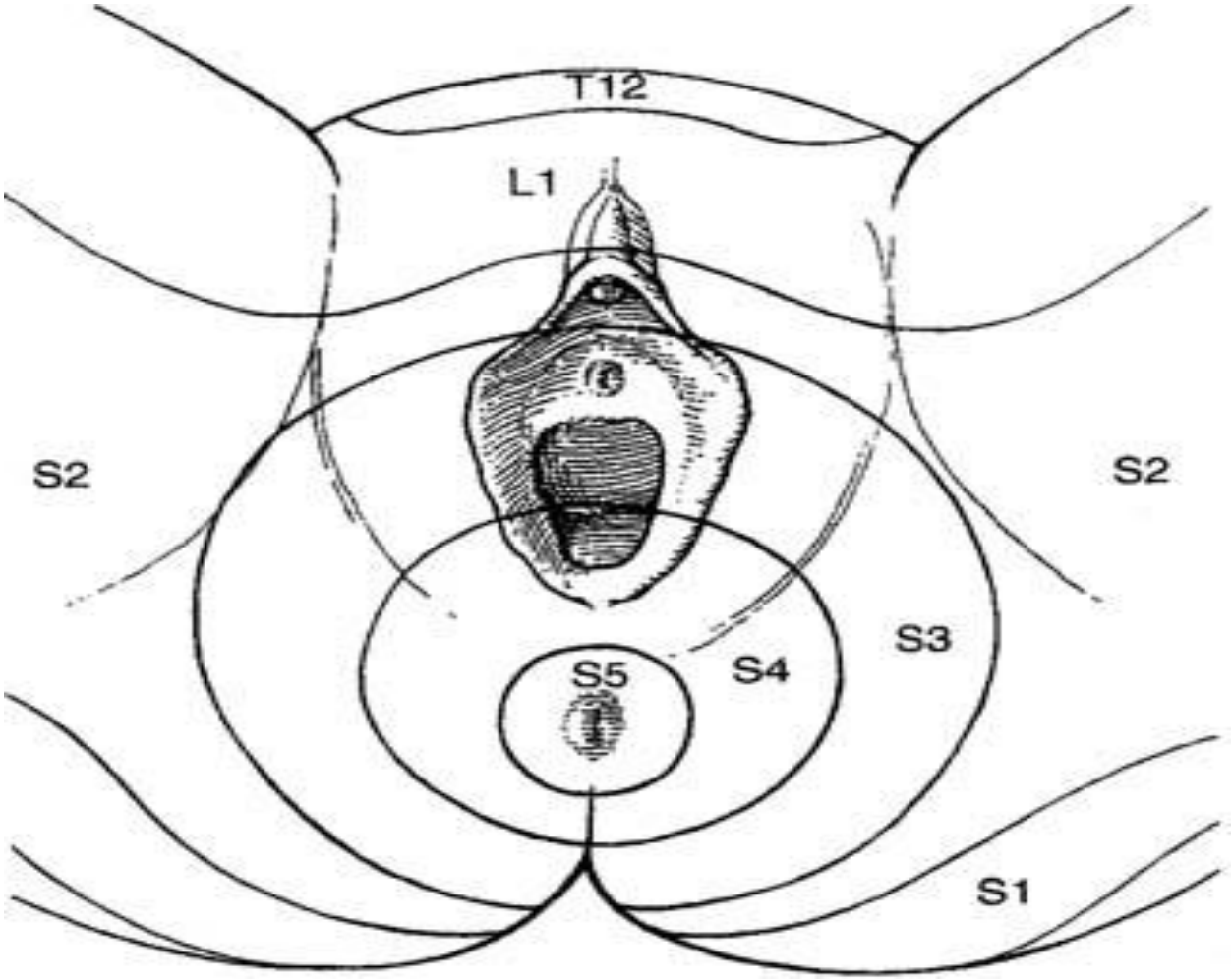
Deep tendon reflex testing of the lower extremities



Clitoral -Anal reflex



perineal sensation



Laboratory tests

- urinalysis (for all patients)
- urine culture (UTI or hematuria)
- do not check renal function : unless
- Other laboratory testing

Clinical tests

- ***Bladder stress test***

✓ ***Post-void residual***

- ✓ diagnosis is uncertain
- ✓ initial therapy is ineffective
- ✓ neurologic disease
- ✓ recurrent urinary tract infections
- ✓ history concerning for detrusor underactivity or bladder outlet obstruction
- ✓ history of urinary retention
- ✓ severe constipation
- ✓ pelvic organ prolapse beyond the hymen
- ✓ new-onset or recurrent incontinence after surgery for incontinence
- ✓ diabetes mellitus with peripheral neuropathy
- ✓ medications that suppress detrusor contractility or increase sphincter tone

Clinical tests

- Urodynamic testing (in women with suspected overflow incontinence)

- Urethral mobility evaluation

Specialist referral

- ✓Abdominal or pelvic pain in the absence of UTI
- ✓Culture-proven recurrent UTI
- ✓Gross or microscopic hematuria with risk factors for malignancy in the absence of a UTI
- ✓suspected vesicovaginal fistula or urethral diverticula on vaginal examination
- ✓ pelvic mass
- ✓ pelvic organ prolapse beyond the hymen

Specialist referral

- New neurologic symptoms in addition to incontinence
- Uncertainty in diagnosis
- History of pelvic reconstructive surgery or pelvic irradiation
- Persistently elevated PVR volume, after treatment of possible causes (eg, medications, stool impaction)
- Suspected overflow incontinence, particularly in the setting of underlying conditions (eg, neurologic conditions, diabetes)
- Chronic urinary catheterization or difficulty passing a catheter

Summary And Recommendations

- Urinary incontinence is common in women
- The major clinical types of urinary incontinence are stress incontinence , urgency incontinence, mixed incontinence and overflow incontinence
- Other etiologies for urinary incontinence in women include other less common
- The initial evaluation of urinary incontinence includes: thorough history physical examination urinalysis

Summary And Recommendations

- History
- Physical examination
- Laboratory tests
- Clinical tests
- Specialist referral


Thank you for your attention