Primary Care Internal Medicine

Female Urinary Incontinence

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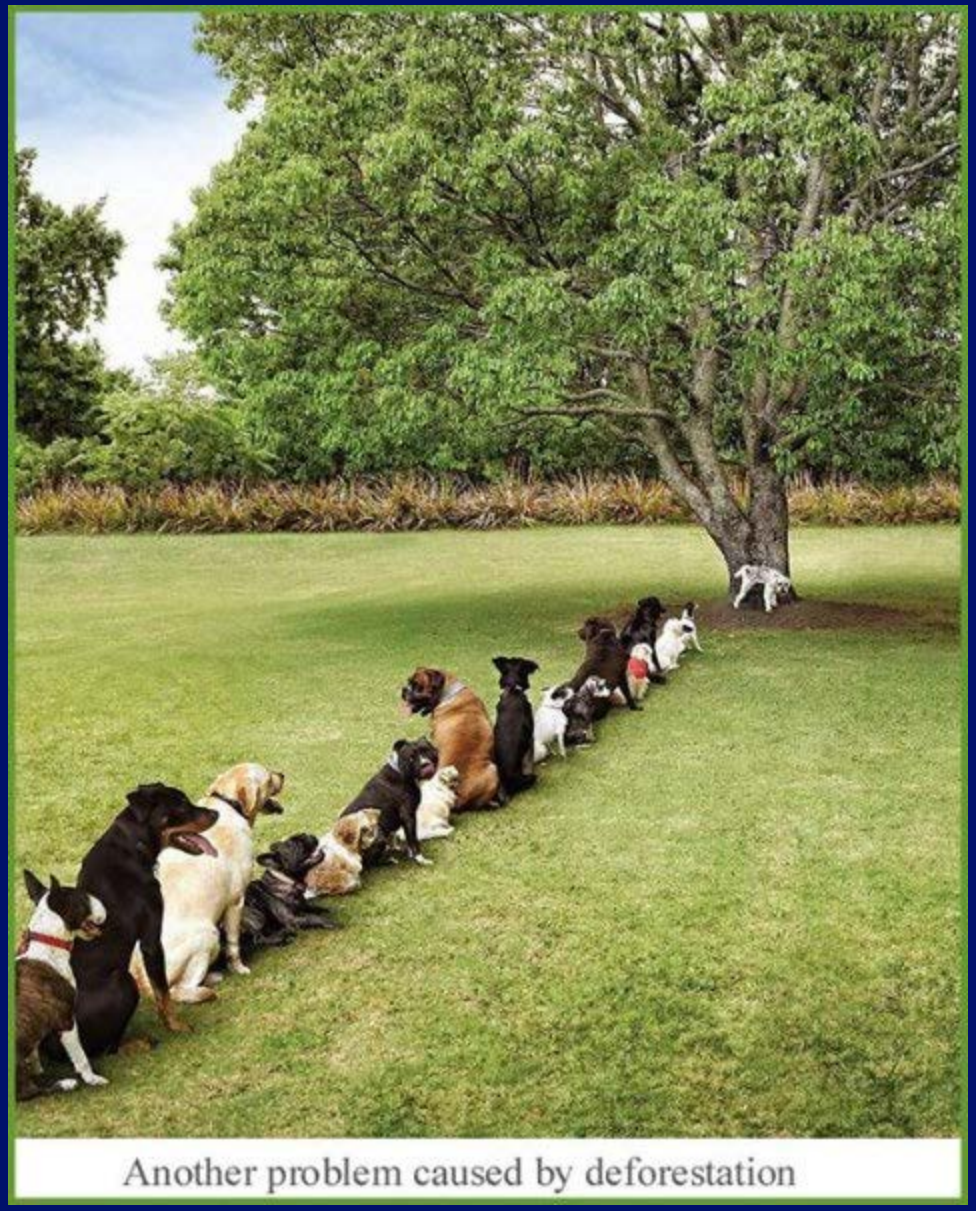
2015

Female Urinary Incontinence

Objectives:

1. The learner will be able to dx and evaluate urinary incontinence using history, exam and voiding diary
2. Treat the incontinent patient with non-surgical measures
3. Become familiar with the newer and surgical treatments of urinary incontinence

I have no relationships with any industry pertaining to this presentation


Another problem caused by deforestation

URINARY INCONTINENCE: PREVALENCE AND COST

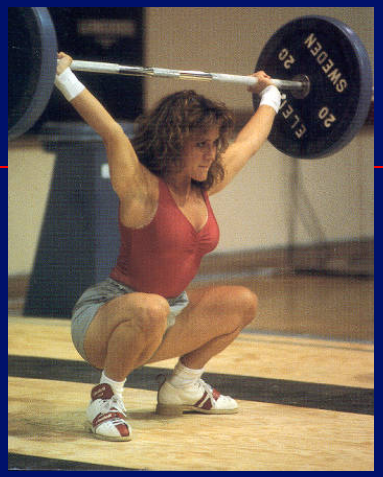
12.4 billion/year

- **17-55% of community dwelling**
- **8.6 billion/year**

- **50% of institutionalized elderly**
- **3.8 billion/year**

Wilson L et al, Obstet Gynecol 2001

STRESS URINARY INCONTINENCE



57 y/o parous, healthy woman

- Urinary incontinence with cough, sneeze or lifting heavy objects
- Leaks if she goes jogging or plays tennis

OVERACTIVE BLADDER (OAB)
(urge incontinence; detrusor overactivity)

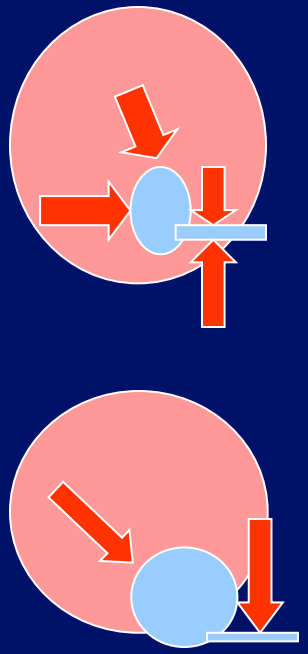
78 y.o. woman

- Leaks on the way to the toilet if

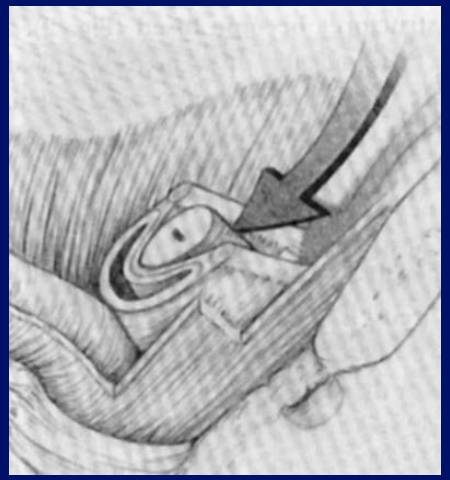
  "she waits too long"
- Voids frequently during the day to avoid urinary incontinence and is beginning to get up more frequently at night
- No or minimal leaking with cough, sneeze, lifting

MECHANISM OF STRESS INCONTINENCE

Pressure Transmission

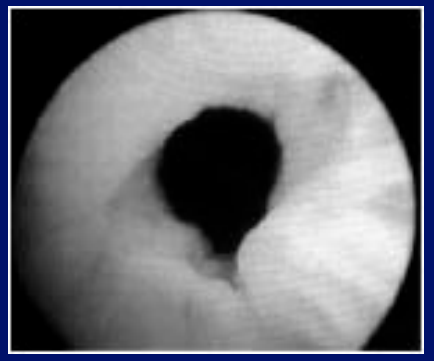


Hammock Theory



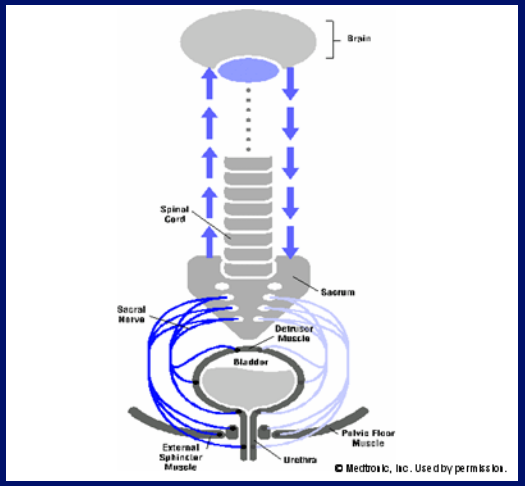
JOL DeLancey. Am J Obstet Gynecol 1994

Urethral Intrinsic Sphincter Deficiency



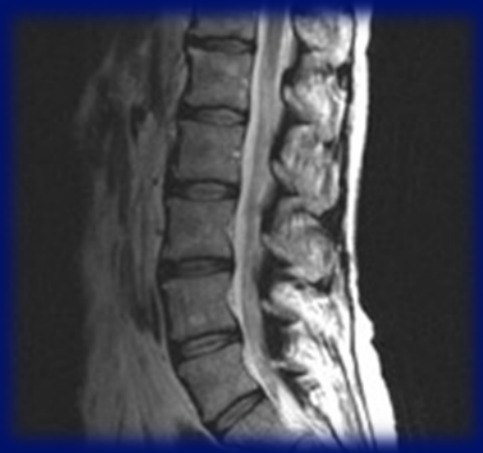
OVER ACTIVE BLADDER (OAB) INCONTINENCE

Pathophysiology: Loss of cortical inhibition of sacral reflexes resulting in uninhibited bladder contractions and peripheral nerve changes



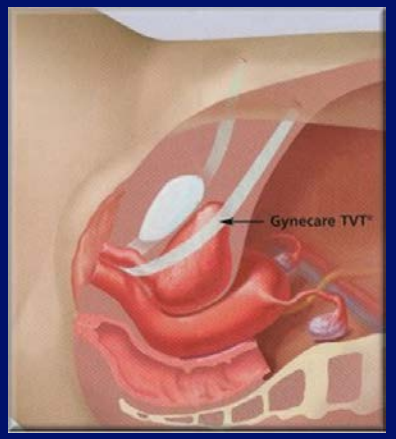
OVER ACTIVE BLADDER: Associated Conditions

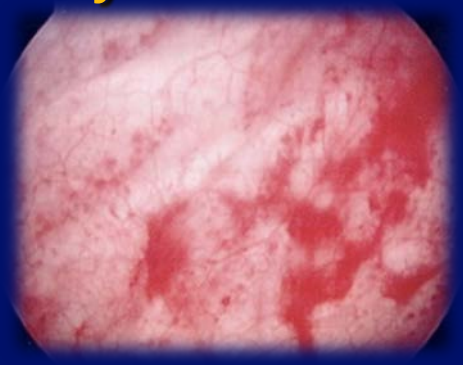
- Idiopathic detrusor overactivity
  - Congenital
  - Aging
- Neurogenic detrusor overactivity
  - Multiple sclerosis
  - Cerebralvascular disease
  - Parkinson’s disease
  - Dementia
  - Neoplasia
  - Spinal cord injury
  - Other neurological diseases



OVER ACTIVE BLADDER: Associated Conditions

- Bladder Outlet obstruction surgery and pelvic surgery
  - Anti-incontinence surgery
  - Advanced pelvic organ prolapse
- Psychosomatic disease
- Urine in proximal urethra
- Inflammation (UTI)
- Orgasm
- Detrusor overactivity with impaired contractility (usually in elderly)
- Mixed incontinence





PRIMARY EVALUATION: History

STRESS INCONTINENCE:

- Do you leak when you cough, sneeze, lift?

URGE INCONTINENCE:

- Do you leak on the way to the toilet?
- Void frequently? (more often than Q 2 hrs)
- Get up more than twice at night to void?
- Do you wet the bed at night in your sleep?

PRIMARY EVALUATION: History

- Duration of incontinence?
- Progressive? Stable?
- How severe? How many and what type of pads?
- How does it affect your life?

PRIMARY EVALUATION: History

- How much fluid do you drink?
- How much caffeine?
- How much alcohol?
- Medication
- Medical history (Parkinson's, MS, stroke, spinal cord injury, Alzheimer's)

URINARY INCONTINENCE: APPROPRIATE PROTECTION

- Menstrual pads versus Incontinence pads

SKIN PROTECTION:

- Ointments for baby's bottoms: inexpensive and easily available ("Balmex")

REVERSIBLE CAUSES OF INCONTINENCE: DIAPPERS

- **D** Delirium or acute confusion
- **I** Infection (UTI)
- **A** Atrophic vaginitis or urethritis
- **P** Pharmaceutical agents (diuretics, alpha one blocker)
- **P** Psychological disorder (depression, behavioral disturbance)
- **E** Excess urine output (water, caffeine, CHF, etc)
- **R** Restricted mobility
- **S** Stool impaction

Resnick N. Management of urinary Incontinence in the elderly. NEJM 1985.

TREATMENT:
STRESS URINARY INCONTINENCE

57 y/o parous, healthy woman

- Urinary incontinence with cough and sneeze
- Leaks if she goes jogging

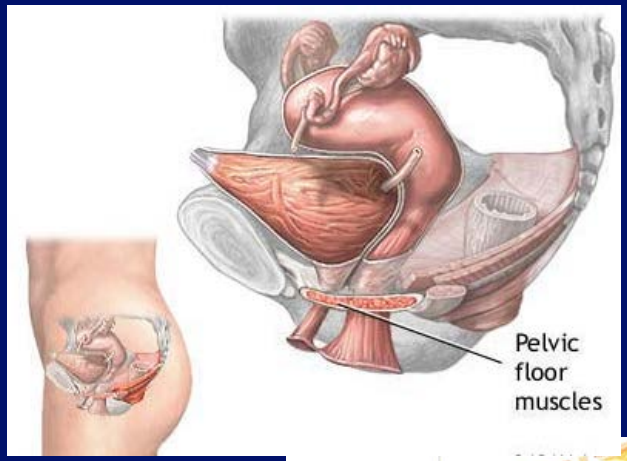
  or plays tennis

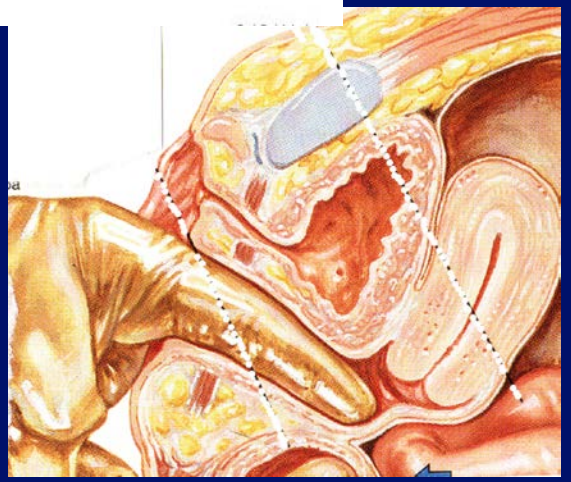
Pelvic Floor Exercises (“Kegels”)

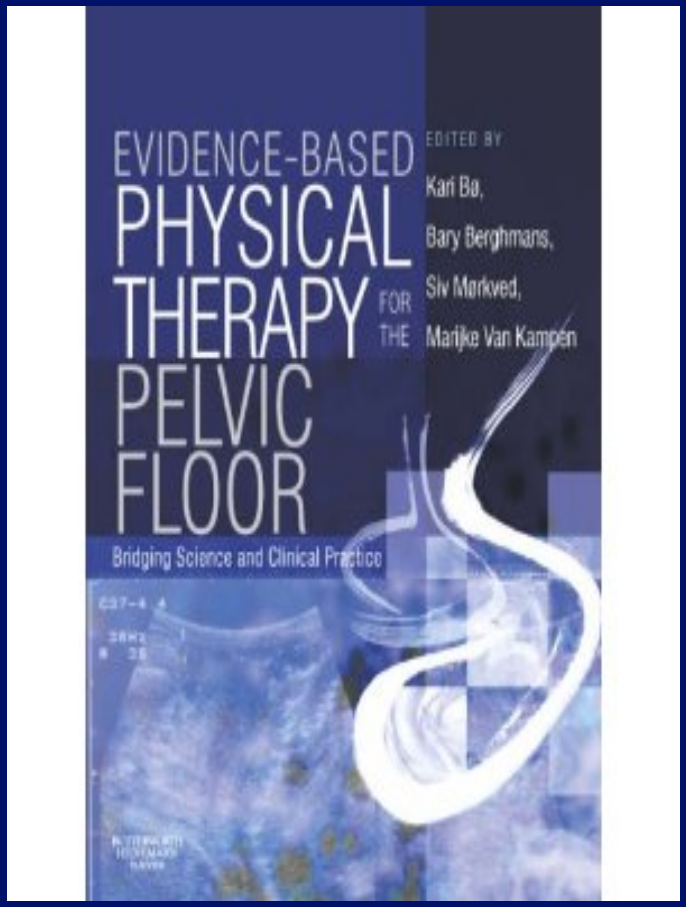
- Perform pelvic floor exercises correctly
- Do enough to strengthen the pelvic floor muscles
- Tighten/contract the pelvic floor muscles at the time of increased intra-abdominal pressure (stress incontinence) or urge sensation

PELVIC FLOOR EXERCISES

- 20-40/day, morning, afternoon, evening and night
- Hold for 5-10 secs
- Use it! Kegel at the time of cough, sneeze or urge to void







www.womenshealthapta.org/

Pelvic floor muscle training versus no treatment , or inactive control treatments, for urinary incontinence in women. Cochrane Database Review, 2010:

- 12 trials; 672 women (435 PFMT, 401 controls)
- Pelvic floor muscle training vs sham, placebo, inactive
- **Conclusion:** The review provides support for the widespread recommendation that PFMT be included in first-line conservative management programs for women with stress, urge, or mixed urinary incontinence.

Refer patient to pelvic floor physical therapy
For: stress, OAB incontinence and frequency

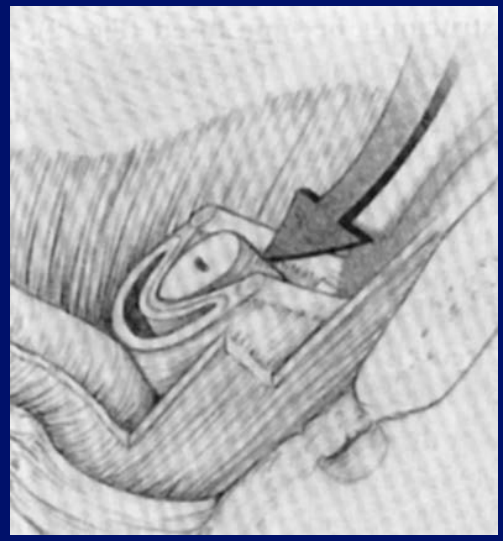
Pelvic floor physical therapists will:

- Teach patient how to perform pelvic floor exercises and strengthen other appropriate muscles
- Guide patient through bladder training
- May utilize vaginal electrical and/or pressure biofeedback or surface electromyography feedback
- May utilize vaginal weighted cones
- Reinforce caffeine reduction and appropriate fluid intake

PESSARIES
or TAMPON FOR INCONTINENCE

Incontinence ring

Incontinence dish



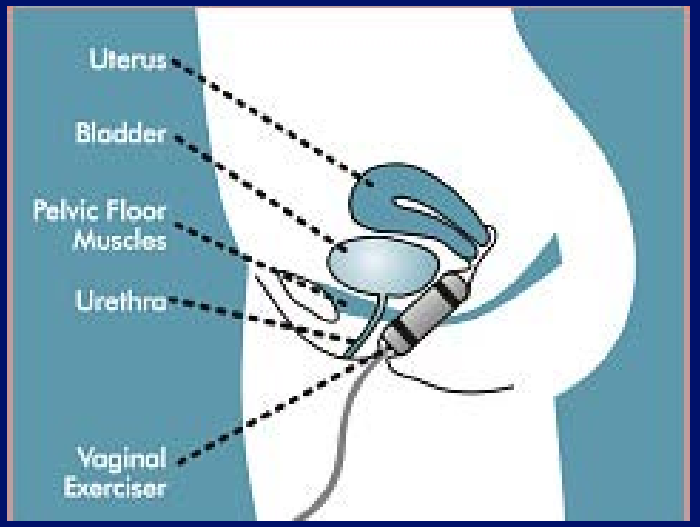
Incontinence dish
with support

“Ob” tampon
(place in vagina)

VAGINAL WEIGHTED CONES

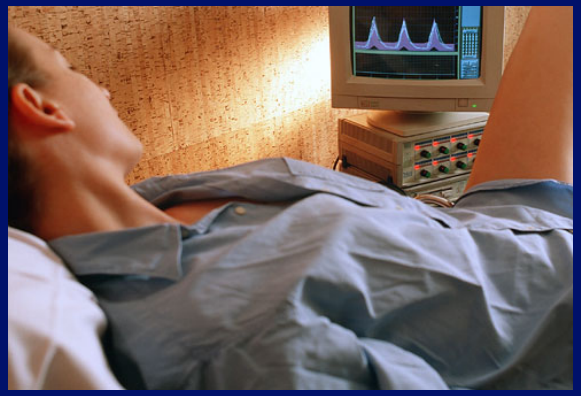
- A form of biofeedback to strengthen pelvic floor muscles
- Patient must not have a lot of vaginal prolapse

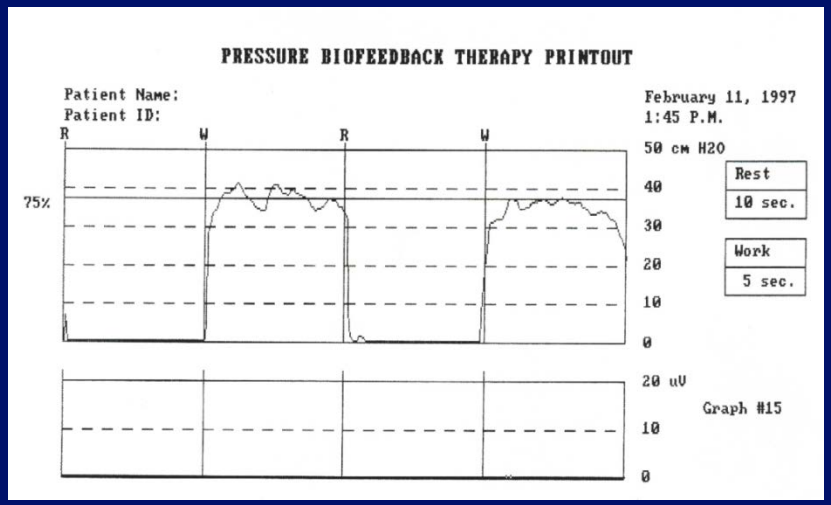
PRESSURE OR EMG BIOFEEDBACK AND/OR VAGINAL ELECTRICAL STIMULATION

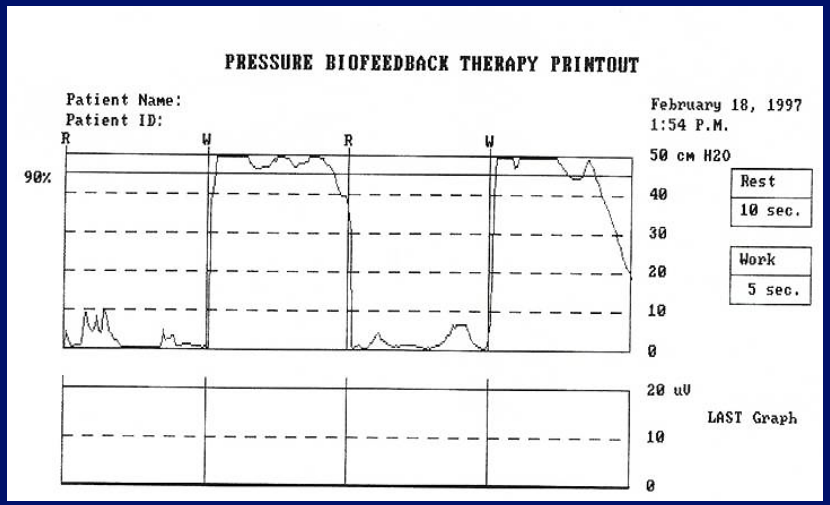


15 minutes BID,
then wean to maintain bladder control

Biofeedback therapy for urinary incontinence







SUMMARY: OUTPATIENT TREATMENT FOR STRESS INCONTINENCE

- Pelvic floor exercises/refer to pelvic floor physical therapy
- Normalize fluid intake, 48-64 oz/day
- Minimize caffeine intake
- Follow-up every 2-3 months x 3-4 visits
- If no significant improvement, consider other treatment modalities/urodynamic testing/refer


"Do you know what I fear most about old age?"
"No what?"
"Incontinence!"
¡¿?
www.funtastic-web.com

TREATMENT: OVERACTIVE BLADDER (OAB)

78 y.o. woman

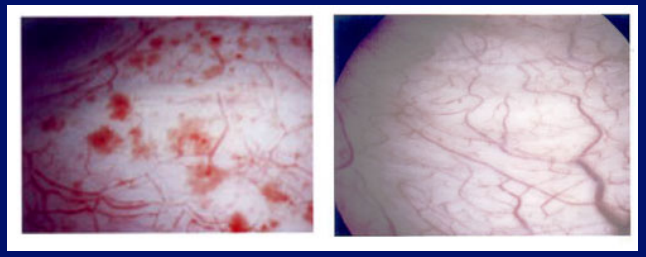
- Leaks on the way to the toilet if
  "she waits too long"
- Voids frequently during the day to avoid urinary incontinence and is beginning to get up more frequently at night
- No or minimal leaking with cough, sneeze, lifting


WATCH WHAT I CAN MAKE PAVLOV DO. AS SOON AS I DROOL, HE'LL SMILE AND WRITE IN HIS LITTLE BOOK.

TREATMENT OF OVER ACTIVE BLADDER INCONTINENCE

- Bladder training (behavioral)
- Discontinue or modify caffeine/diuretics
- Normalize fluid intake (48-64 oz/day)
- Vaginal estrogen therapy
- Pelvic floor exercises
- Patient education

Neuroplasticity



At birth
C nerve fibers
pain , temperature

maturation

A delta nerves
Lightly myelinated
Small fibers

Bladder training
Normalize bladder function

Bladder injury
Obstruction, inflammation
Spinal cord disease, etc

A delta nerves
become C fibers

Urogynecology and Pelvic Reconstructive Surgery
Walters M, Karram M. Mosby, 2007.

Treatment of Overactive Bladder: Voiding/Leak/Intake Diary

Date	Time	Amount voided	Amount leaked (1, 2, 3)	Activity with leaking	Urge present at time of leak: yes/no	Fluid Intake
3/25/13	7 am	10 oz	---			
	8 am					10 oz coffee 8 oz OJ
	9:15 am	4 oz	2	Walking to toilet	yes	
	9:30					10 oz water
	10:30 am	3 oz	1	Walking to toilet	yes	10 oz tea
	12:15 pm	4 oz				16 oz coke

BLADDER TRAINING

1. Review Diary with patient
2. Pick shortest voiding interval
3. Void by the clock starting at the shortest interval + 15 minutes during the day
4. Gradually lengthen interval
5. Goal = void every 3-4 hours during the daytime


COFFEE
"I've reached that age where I've given up on Mind Over Matter and am concentrating on Brain over bladder

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	12:15 pm	4 oz				16 oz coke

MEDICATION FOR OVERACTIVE BLADDER INCONTINENCE

- oxybutinin XL 5, 10, 15 mg QD *(crosses blood brain barrier easily)*
- tolterodine LA 2 or 4 mg QD
- tolterodine 1 or 2 mg BID
- oxybutinin patch 3.9 mg/day
- oxybutinin immediate release 5 mg tablets, 2.5-5 mg BID-TID

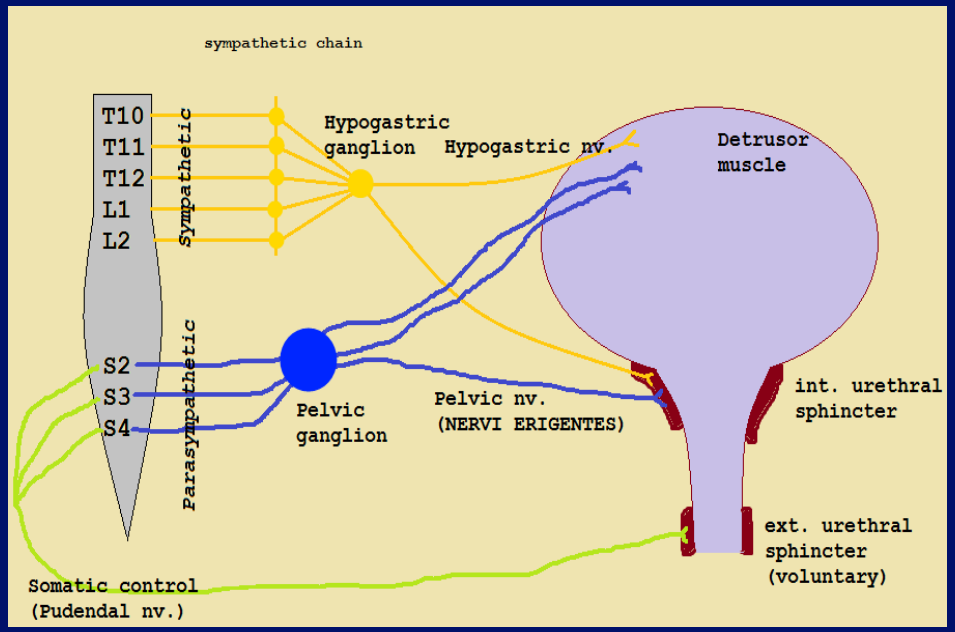
MORE MEDICATIONS FOR OVERACTIVE BLADDER INCONTINENCE

- trospium 20 mg PO BID
- trospium XR 60 mg QD
- solifenacin 5-10 mg PO QD
- darifenacin 7.5 – 15 mg PO QD *(more M3 receptor, bladder, specific)*
- fesoterodine 4 – 8 mg PO QD
- oxybutinin gel 1 sachet topically QD

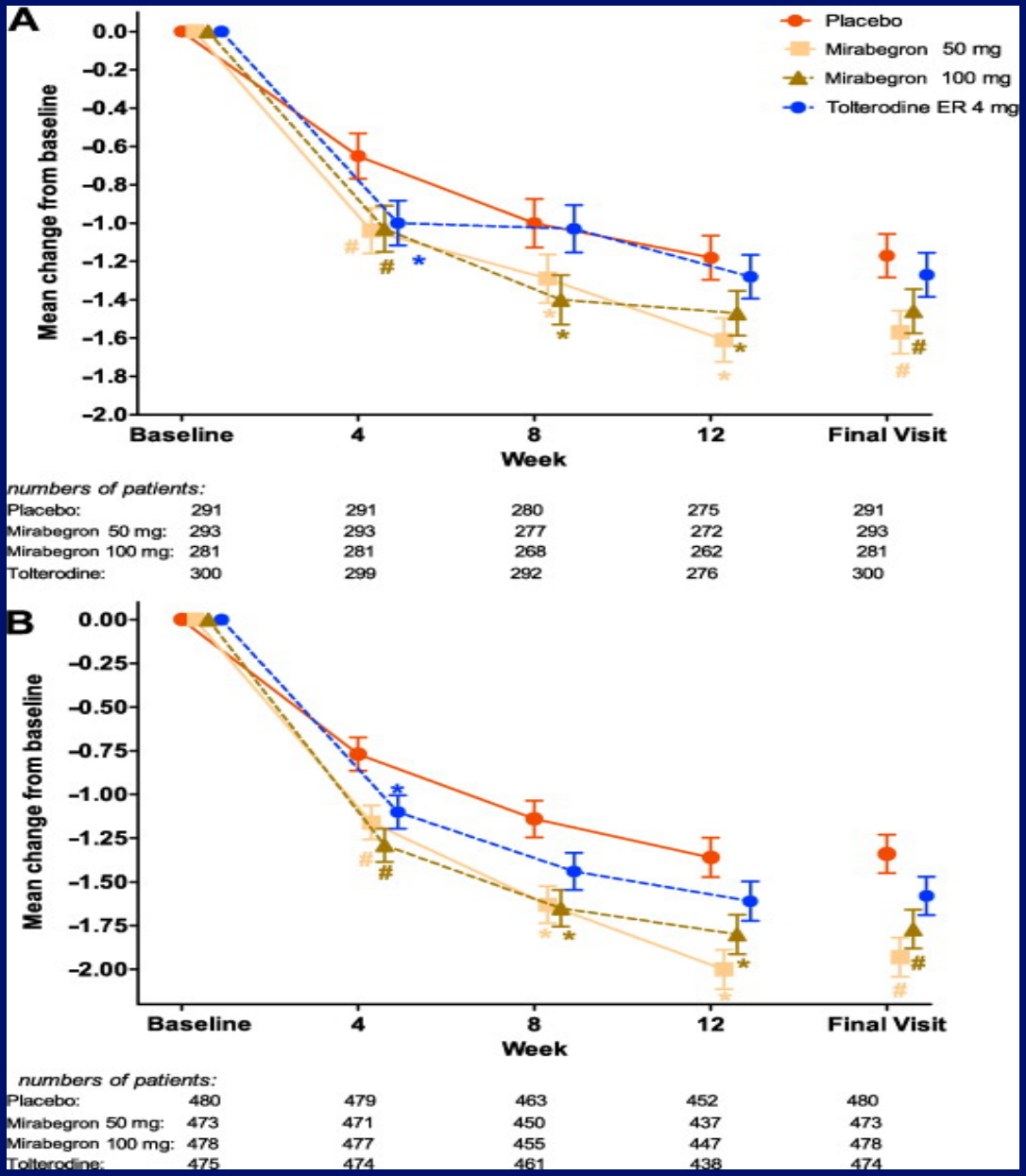
- imipramine 10-30 mg PO QHS

mirabegron for Overactive Bladder

- Beta 3 adrenoceptor agonist
- Relaxes detrusor muscle
- Increases bladder capacity



Efficacy & tolerability of mirabegron Phase III trial



Khulla V et al. Eurol Urol 2013

Safety & Efficacy of mirabegron, 12 mos f/u

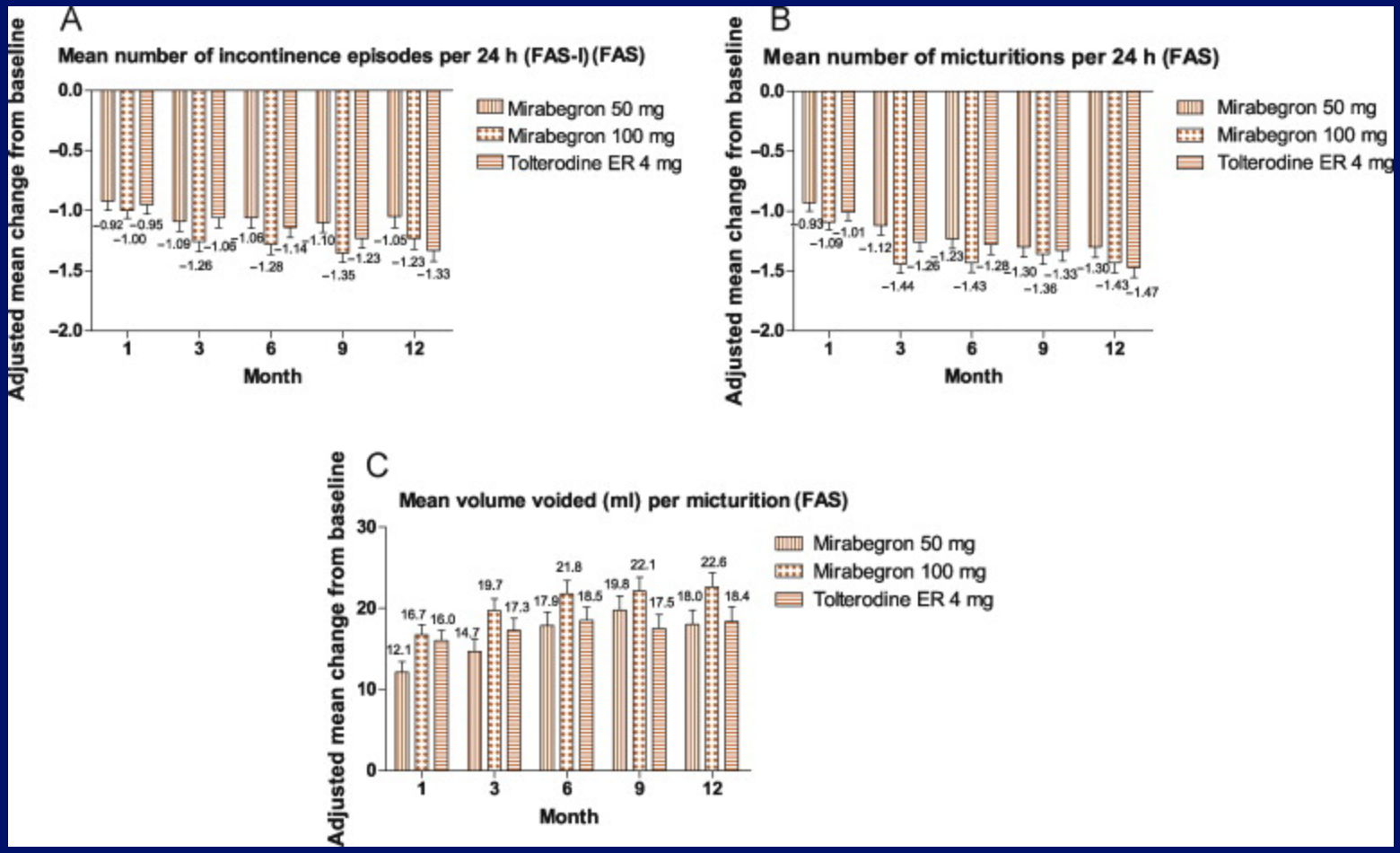
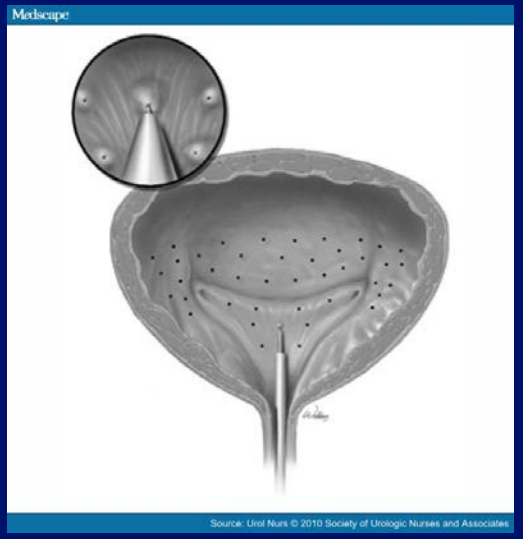


Fig. 3. Efficacy variables—adjusted mean change from baseline at each visit:
(A) mean number of incontinence episodes per 24 h (full analysis set [FAS]-I);
(B) (B) mean number of micturitions per 24 h (FAS); (C) mean volume voided per micturition (FAS). ER = extended release.

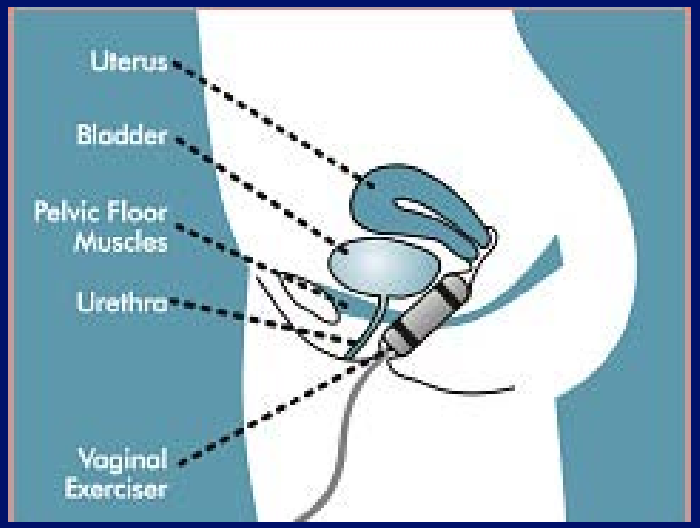
Chapple CR et al. Euro Urol 2013

Botox injections for Overactive Bladder



- Decreases OAB sxs
- Increases bladder capacity
- Repeat every 10 months
- Approximately 10% of pts may need to perform intermittent self catherization for urinary retention temporarily
- Risk of recurrent UTIs

VAGINAL ELECTRICAL STIMULATION

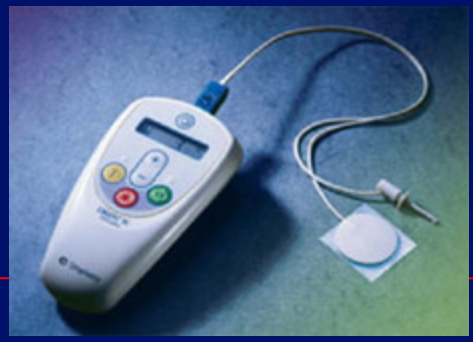


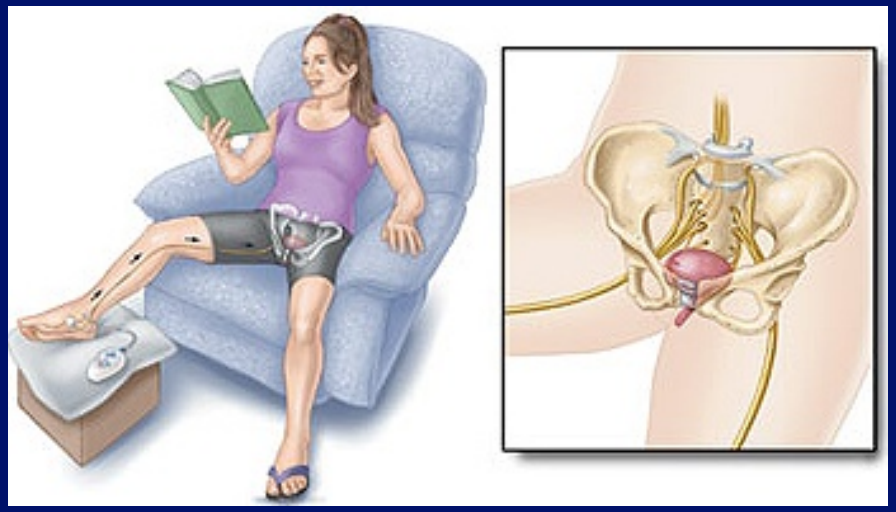
15 minutes BID,
then wean to maintain bladder control

VAGINAL ELECTRICAL STIMULATION

- Sand, Am J Ob Gyn ‘95 (DBRCT): sig decrease in mean # of incont. Episodes
- Brubaker, Am J Ob Gyn ’97 (DBRCT): sig decrease in detrusor instability incontinence
- Yamanishi, Urology ’00 (BRCT): sig improved continence, improved bladder capacity

PERIPHERAL NERVE STIMULATION

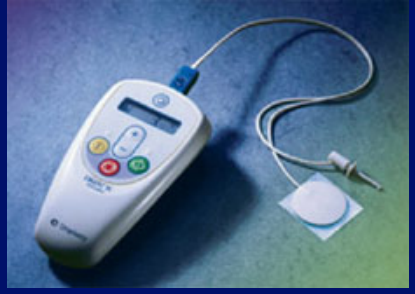




Rosenblatt P et al, AUGS 1999

- Refractory frequency and urge incontinence
- n = 45
- 12 weekly treatments
- Day voiding frequency decreased by 23%
- Nocturia decreased by 25%
- Incontinence episodes decreased by 31%
- No adverse side effects

Treatment for OAB: Posterior Tibial Nerve Stimulation



Randomized trial of percutaneous tibial nerve stimulation versus sham efficacy in the treatment of overactive bladder syndrome

- 55% of the treated improved
- 21% of the sham treated improved

Peters KM et al. J Urol 2010

Long-Term durability of Percutaneous Tibial Nerve Stimulation for the Treatment of Overactive Bladder..

Patients previously treated with PTNS , continued, monthly PTNS treatments for 12 months (not blinded or sham controlled)

at 12 months:

- Mean frequency decreased by 2.8 voids/day
- Urge incontinence episodes decreased by 1.6 episodes/day
- OAB symptom questionnaire significantly improved

MacDiarmid SA et al. J Urol 2010

SUMMARY: TREATMENT OF Overactive Bladder

Education regarding: fluids/caffeine
Teach pelvic floor exercises
Give patient a Diary to fill out
Refer to PT

Modify fluid/caffeine intake based on Diary
Start bladder training based on Diary
Start medication (+/-); check kegel or **refer to PT**

Follow-up visit in 8 weeks
Review 2nd Diary
Reinforce bladder training; check kegel
Start medication if not already started
Refer to PT

Continue follow-up visits every 8 weeks for 2-3 visits, if no Improvement or **refer to PT**
-> urodynamic testing or other therapy

- Reference:

Nygaard I. Idiopathic Urgency Urinary Incontinence. NEJM 2010;363:1156-62.

Young patient with persistent frequency, urge, +/- bladder pain after urinary tract infection with negative follow-up urine cultures:

- Check fluids/caffeine
- Bladder train
- Medication, ie, oxybutinin XL, tolterodine LA, etc. or “Urelle” (methanamine, methylene blue, hyoscyamine, salicylate, sodium phosphate)

Older patient with nocturia:

Have patient do a voiding/intake/leak diary

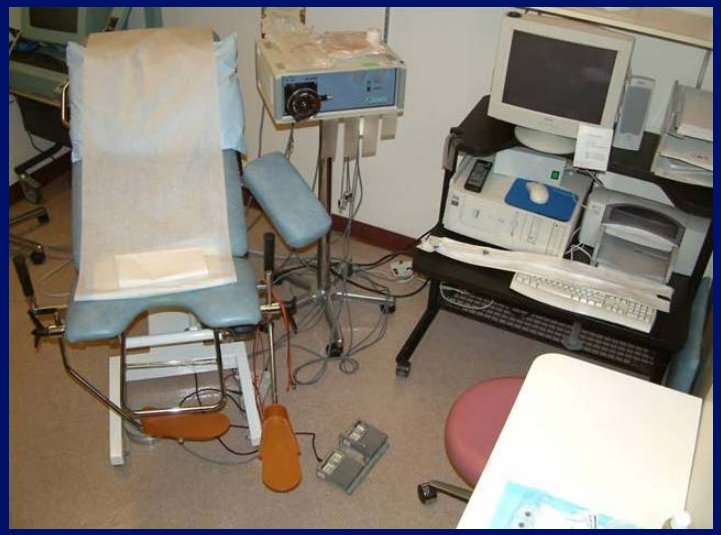
- If voiding diary shows small volumes with each void:
  - Start Bladder training to increase bladder volume
  - Start an anticholinergic or imipramine 10 mg, titrate up by 10 mg every 1-2 wks

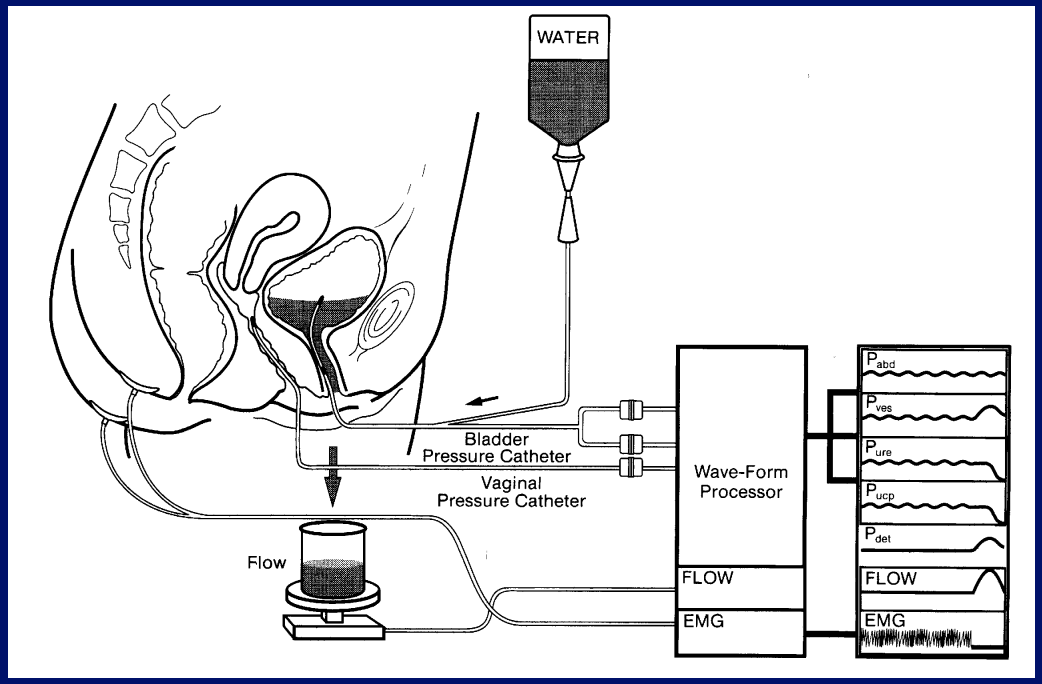
- If voiding diary shows large volumes with each void:
  - Check evening fluid intake
  - Lie down with feet raised during the day to mobilize lower extremity edema

OVERFLOW URINARY INCONTINENCE

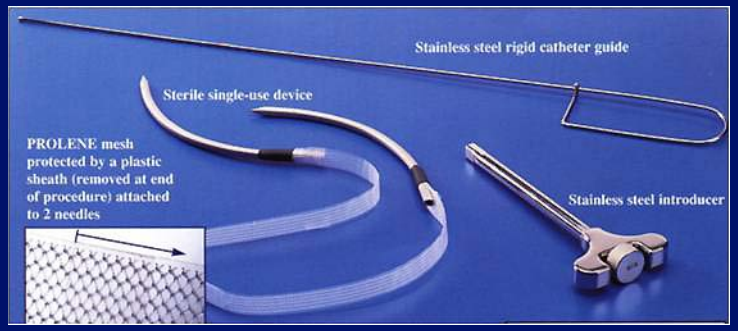
- Bladder scan (ultrasound) or straight cath patient for post void residual
- If greater than 100 ccs may have overflow, but usually only symptomatic when PVR is greater than 150-200 ccs
  - Treatment is difficult: patient can learn how to perform intermittent self catheterization; trial of sacral nerve stimulation or high frequency vaginal electrical stimulation (not FDA approved)

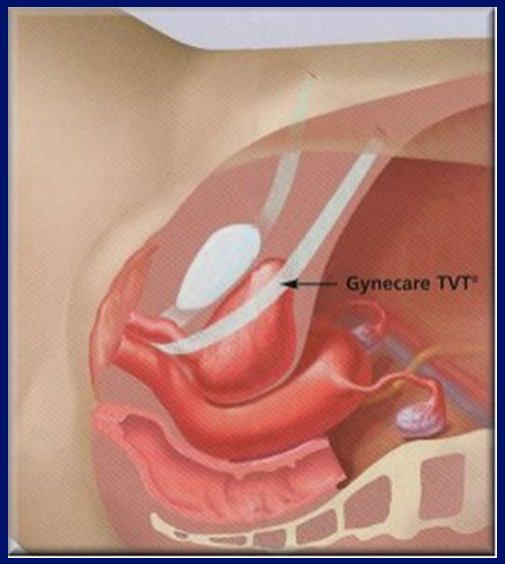
URODYNAMIC TESTING





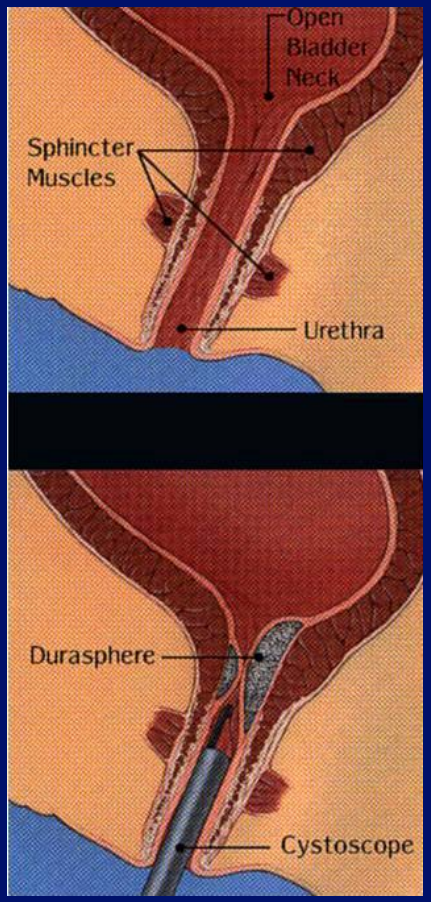
MINIMALLY INVASIVE SLINGS





- 30-45 minute procedure
- Local/spinal/general anesthesia
- Same day or next day discharge
- Minimal post-op pain
- 3 week recovery; back to work in 3-7 days
- Adjustable intra-op

STRESS INCONTINENCE: BULKING INJECTION THERAPY



DURASPHERE (graphite)

- **FDA approved 9/99**
- **Difficult to inject**
- **More permanent effect**

COAPTITE (Calcium hydroxyapatite)

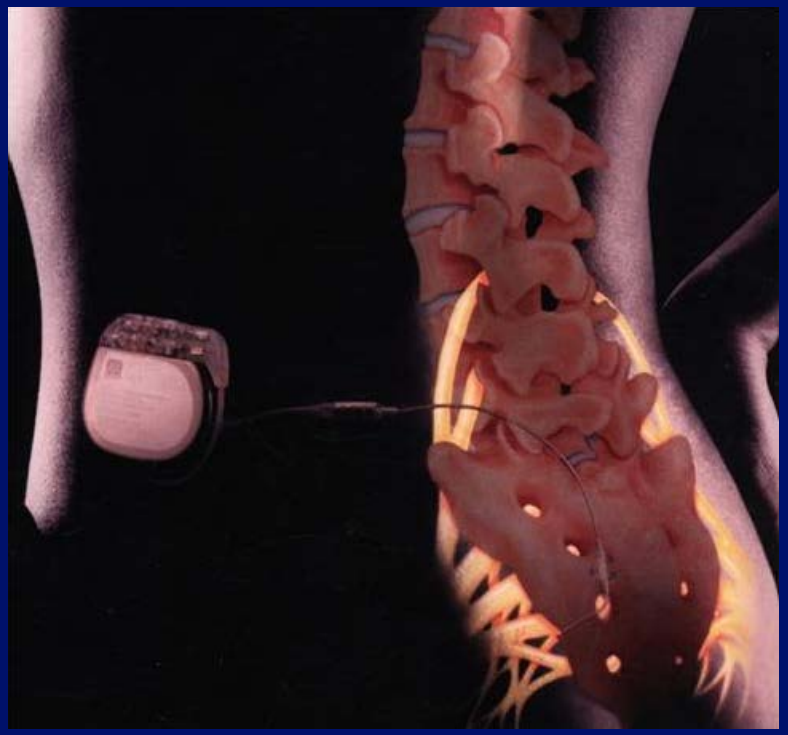
- Not permanent
- Office procedure

MACROPLASTIQUE (silicone)

- Not permanent
- Office procedure

SACRAL NEUROMODULATION THERAPY ("INTERSTIM")

- For refractory frequency, urge, OAB incontinence
- For the above plus urinary retention
- *Now FDA approved for fecal incontinence*



IN SUMMARY:

- Modify fluids/caffeine intake
- Check quality of “kegel”
- Voiding diary
- Bladder training
- Refer to pelvic floor physical therapy