



Urinary Incontinence

Attila Majoros

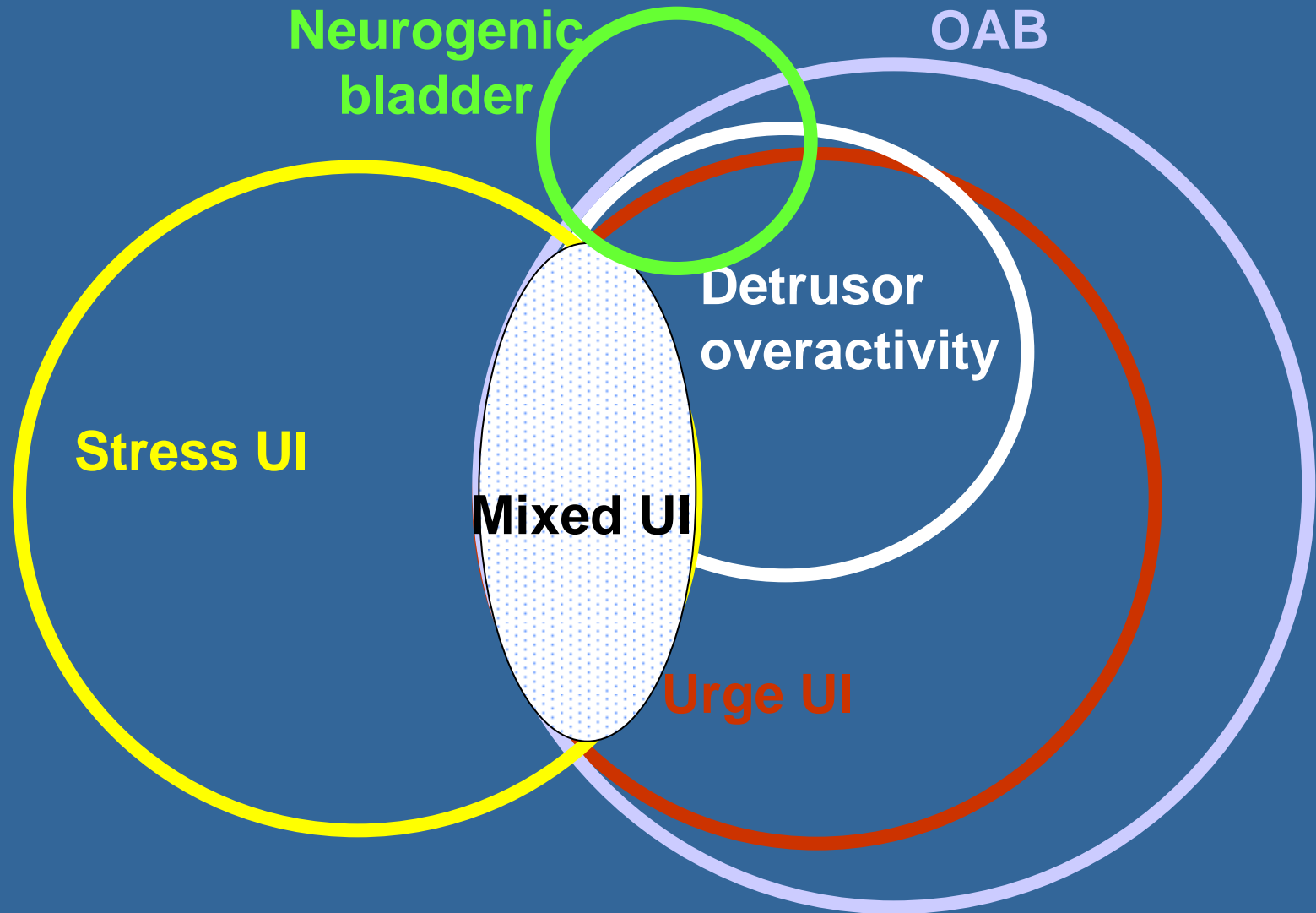
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Definition

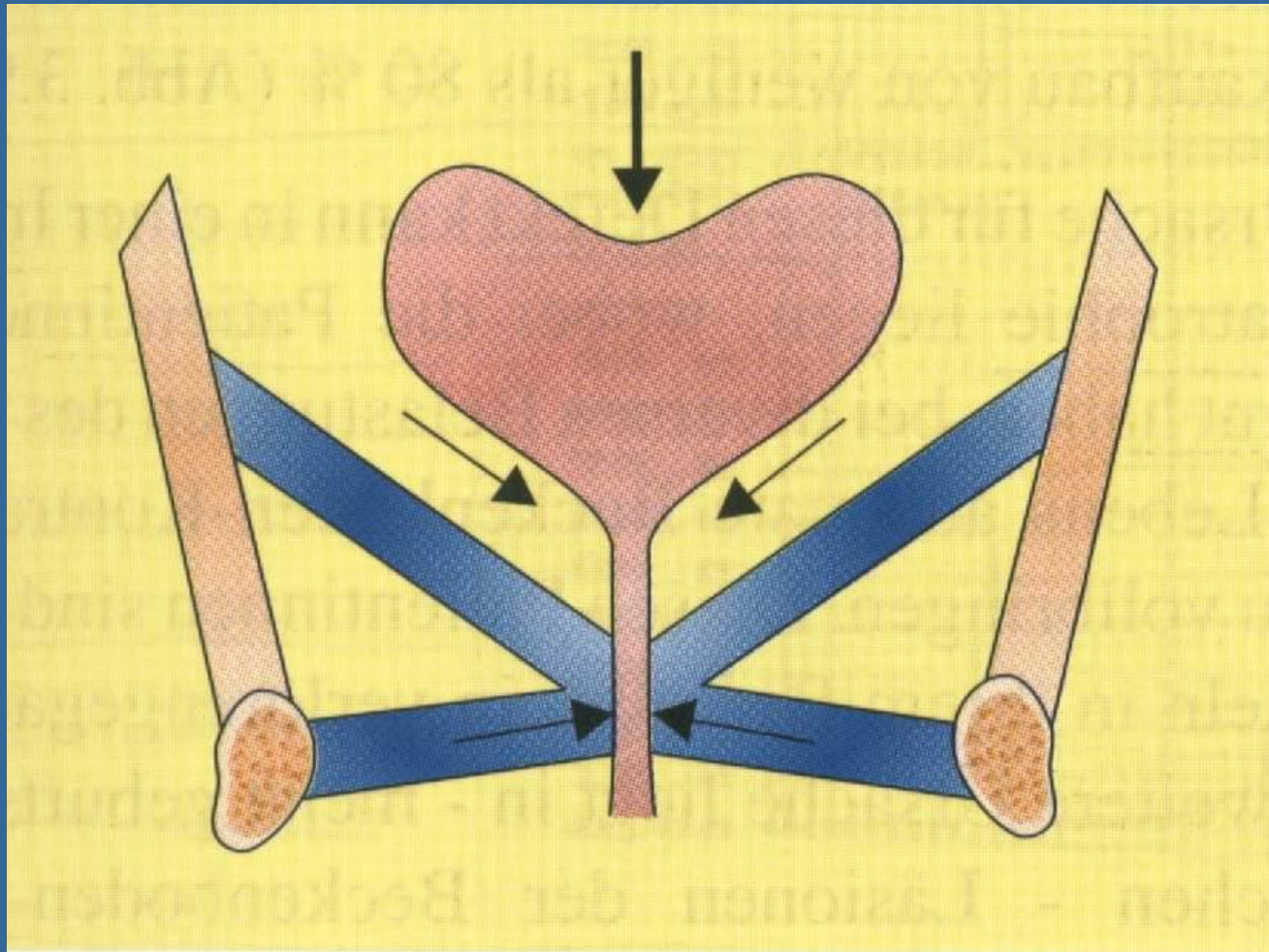
Incontinence is an involuntary leakage of urine through the urethra.

(International Continence Society)

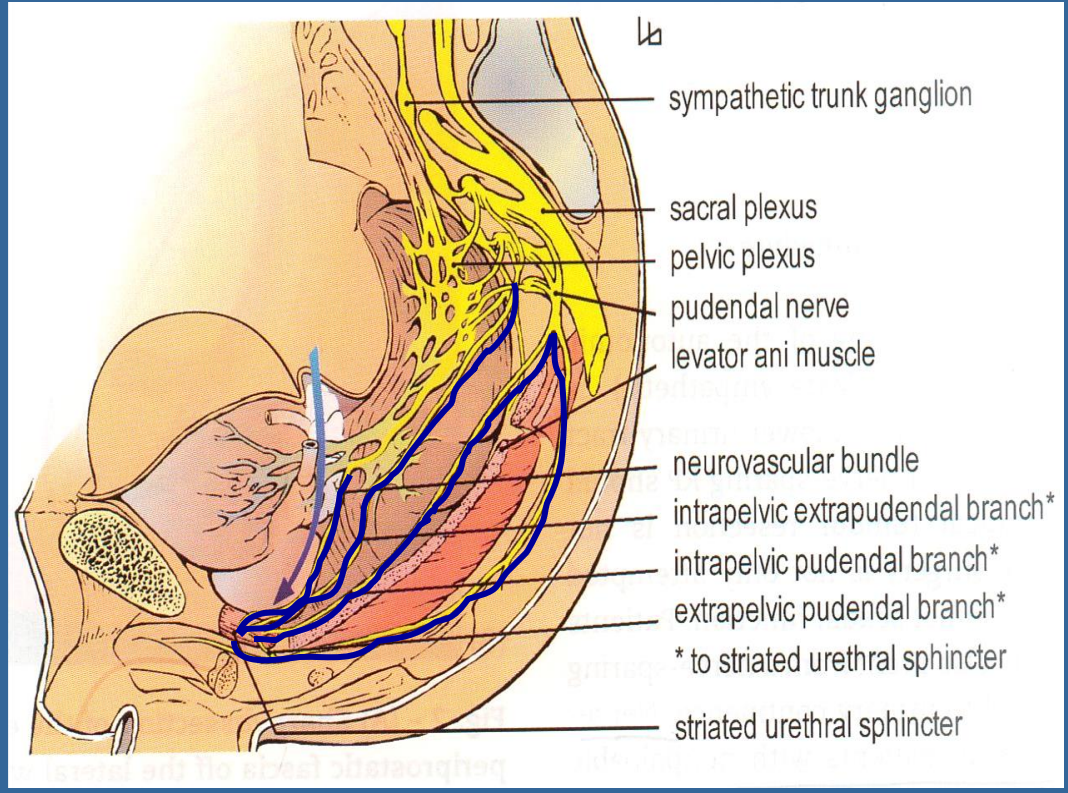
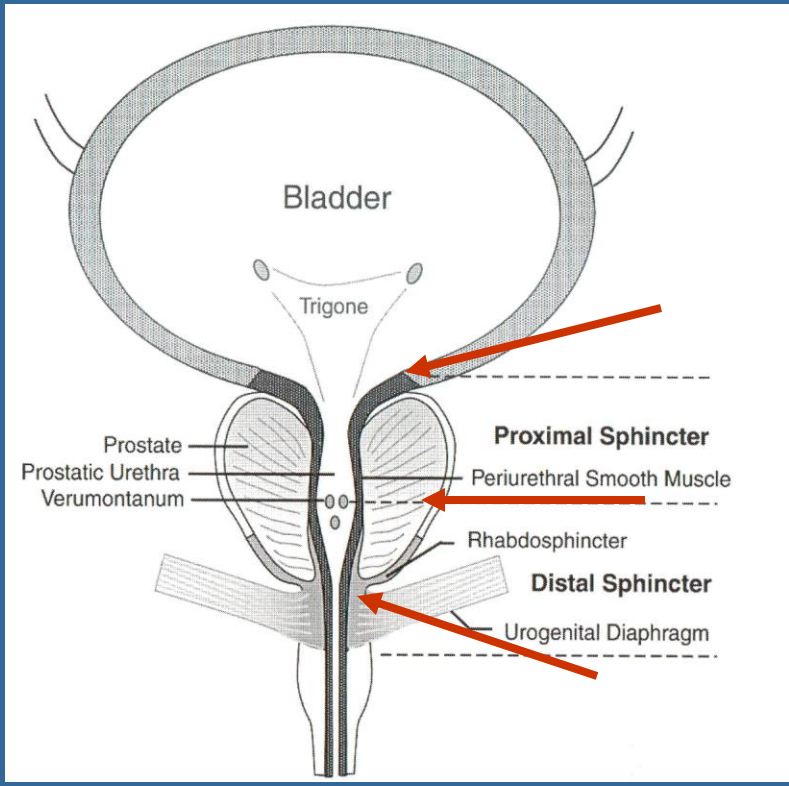
Urinary Incontinence (UI) and Overactive Bladder (OAB)



Anatomy of female lower urinary tract and pelvic floor



Anatomy of male lower urinary tract and pelvic floor



RA Appel: Voiding Dysfunction, Humana Press, 2000

Kessler TM et al, Eur Urol, 2007, 51:90-97

The innervation of the lower urinary tract

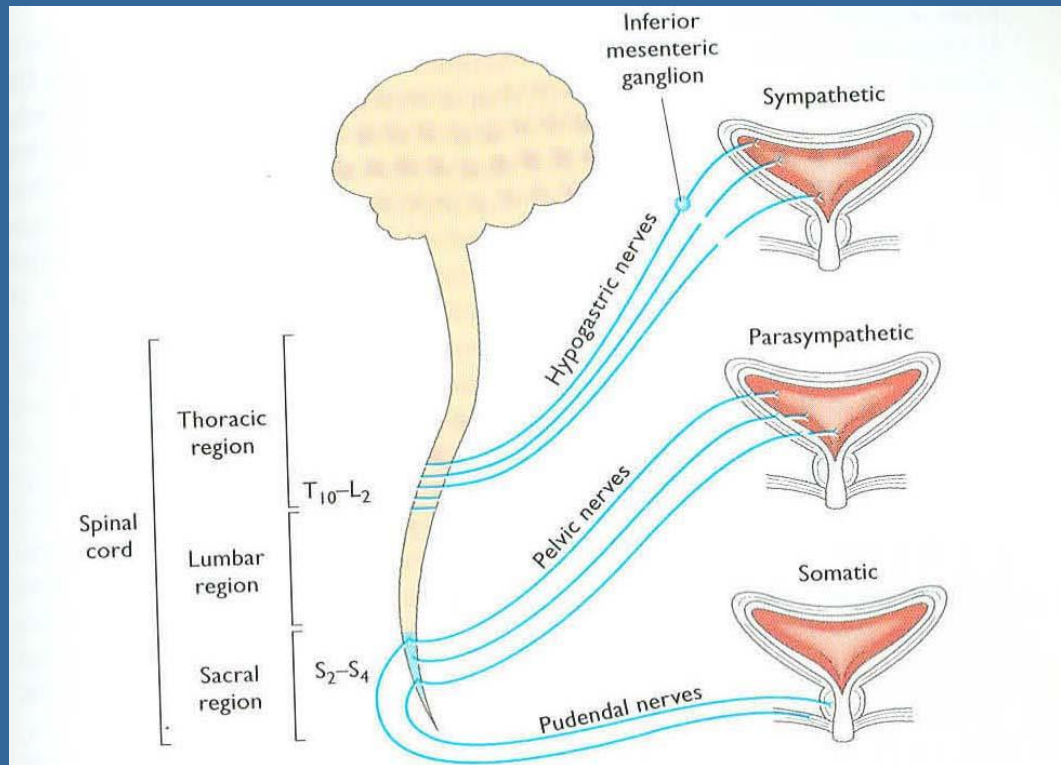


Figure 2.4.
Innervation of the lower urinary tract.

The function of the lower urinary tract is controlled by the central nervous system via a complex system of reflex mechanisms. The principle nerve supply to the bladder is via the pelvic nerves. Sensory fibres detect the degree of stretch in the bladder wall.

Epidemiology

Frequency of urinary incontinence (%)

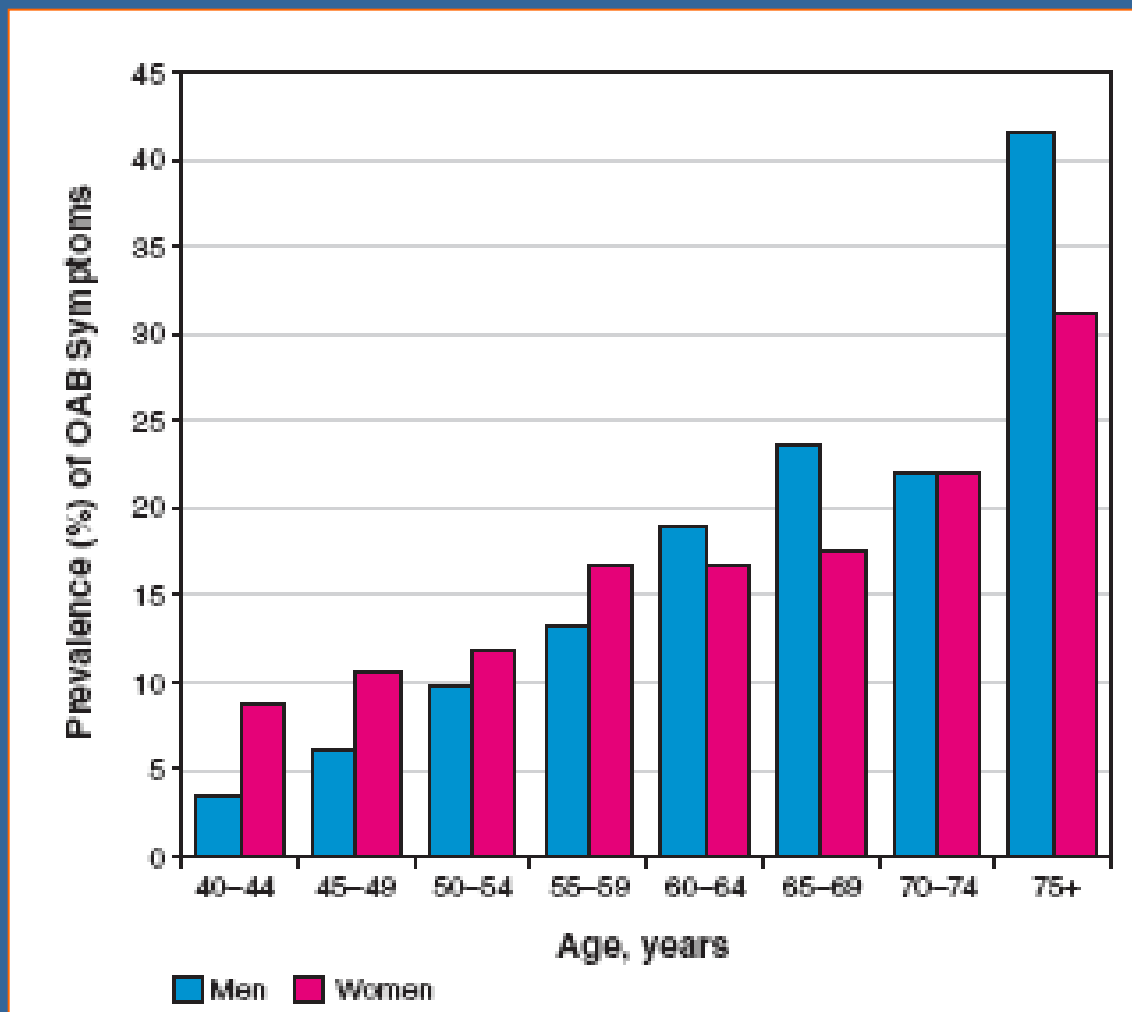
	<i>female</i>	<i>male</i>	<i>literature</i>
USA	37 (12-52)	19 (6-23)	Hampel és mtsai Urology 1997 (50)
Europe	26 (12-58)	24 (5-21)	Hampel és mtsai Urology 1997 (50)
GB	14	6,6	Brocklehurst és mtsai BMJ 1993 (36)
Spain	64,2	35,8	Damian és mtsai Eur Urol 1998 (34)
Italy	11,4	3,4	Bortolotti és mtsai Eur Urol 2000 (37)
Belgien	16,3	5,2	Schulman és mtsai Eur Urol 1997 (32)

Prevalence of overactive bladder: ~ 16 %

male-female

13,6 % vs 7,6% (continent)

2,4% vs 9,3% (incontinent)



Diagnosis

- Patient's history
 - Voiding diary*
 - Questionnaires*
- Urine examination
- Vaginal and rectal examination
- Uroflowmetry
- Residual urine
- Ultrasound
- Urodynamical measurement
- Endoscopy
- Radiology

Voiding diary

Fluid intake:

When ?

How much ?

Voiding:

When ?

How much ?

Leakage ?

Urgency ?

VIZELÉSI NAPLÓ

Elő- és utónév _____

Kezelési időtartam 19 ____ től ____ ig

A vizelési naplót minden ellenőrzés alkalmával hozza magával!

A legközelebbi ellenőrzés időpontja:

19 _____ óra

19 _____ óra

19 _____ óra

19 _____ óra

19 _____ óra

Orvosi
Bélyegző ▶

Blank box for medical stamp

Dátum: _____

Idő (óra)	Folyadékbevitel (ml)	Úrtett mennyiség (ml)	Erős inger igen/nem +/-	Vizelésvesztés		Vizelésvesztés foka 1 2 3
				inger kapcsán igen/nem +/-	inger nélkül igen/nem +/-	
01.00						
02.00						
03.00						
04.00						
05.00						
06.00						
07.00						
08.00						
09.00						
10.00						
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24.00						

Physical examination

Vaginal inspection

Rectal palpation

Neurological examination



Urodynamics



Uroflowmetry

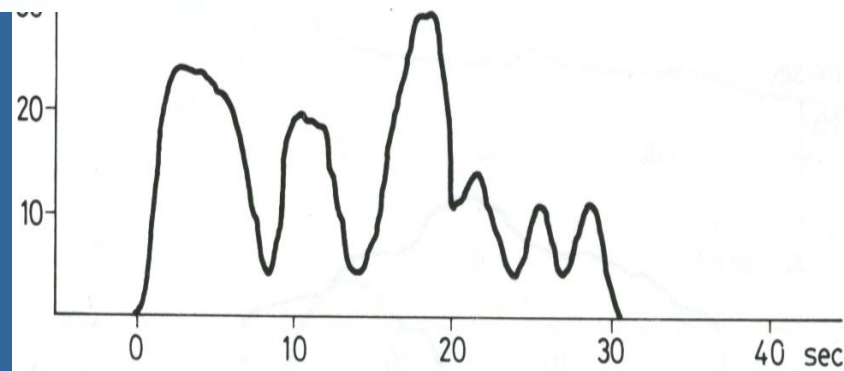
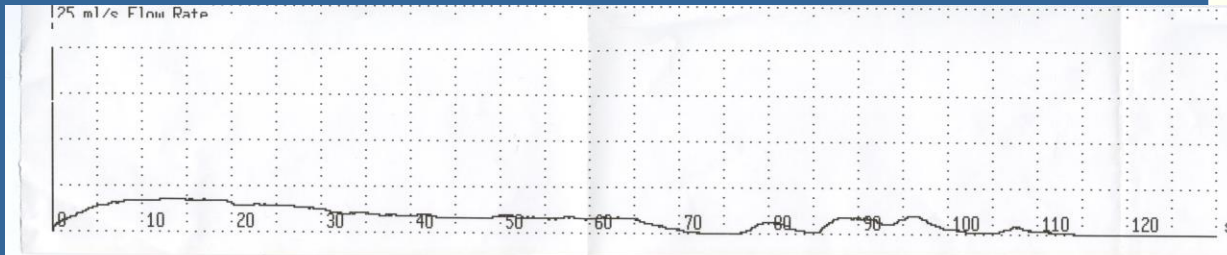
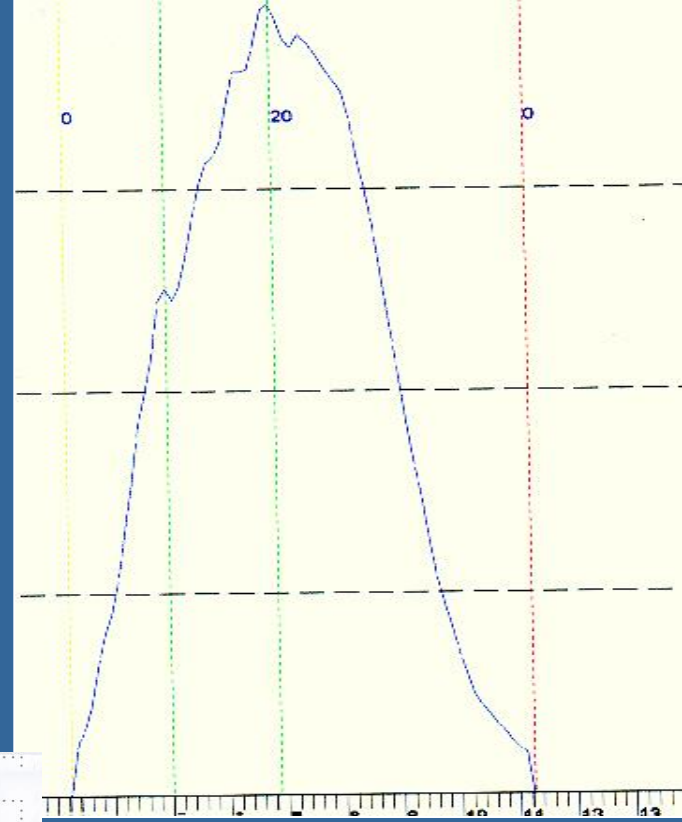
Cystometry

Pressure Flow Study

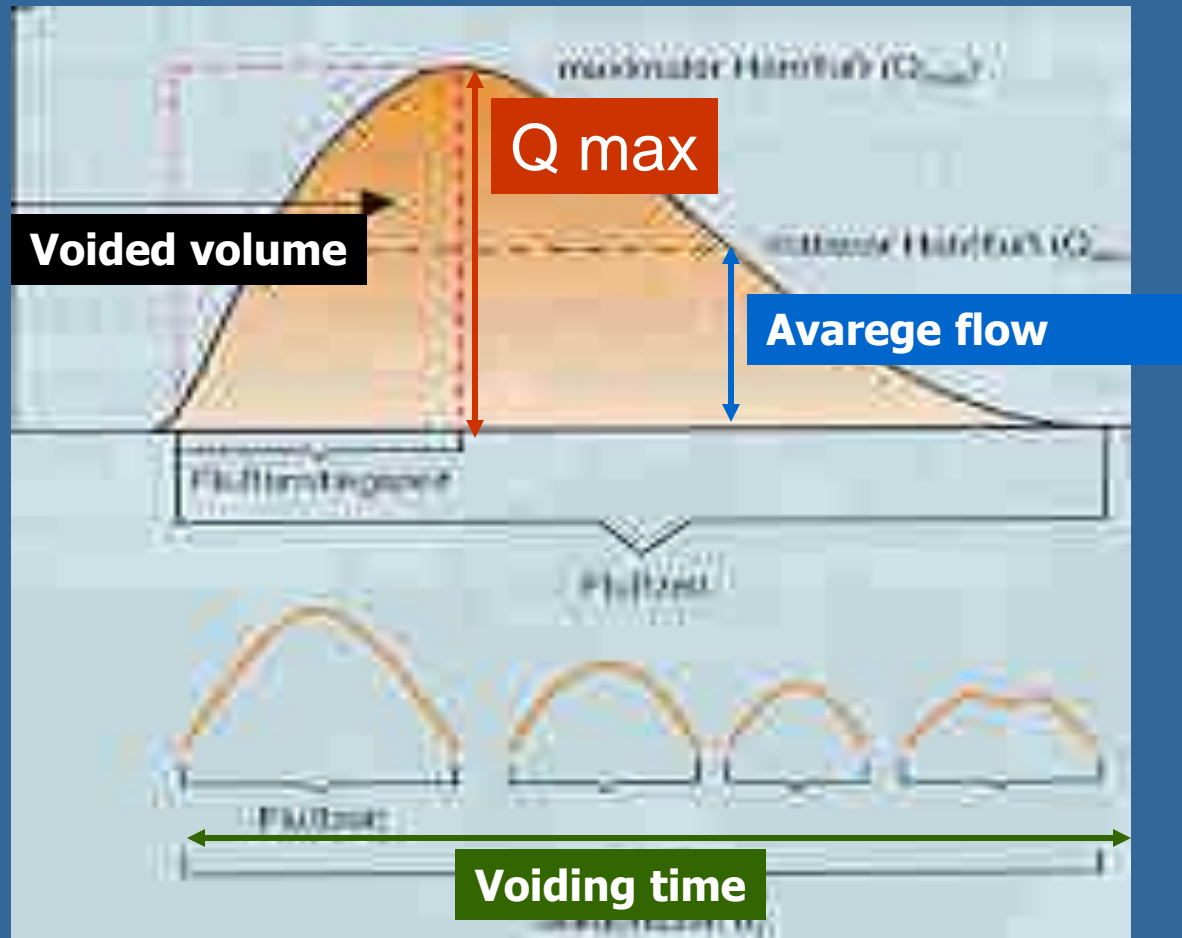
Urethral Pressure Profile

Pelvic floor EMG

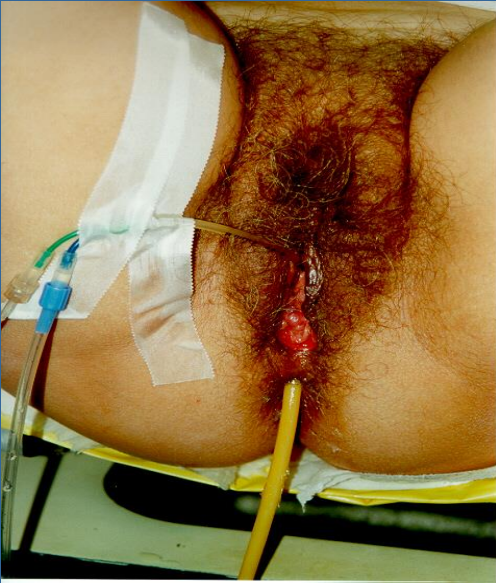
Uroflowmetry



Uroflowmetry: definition

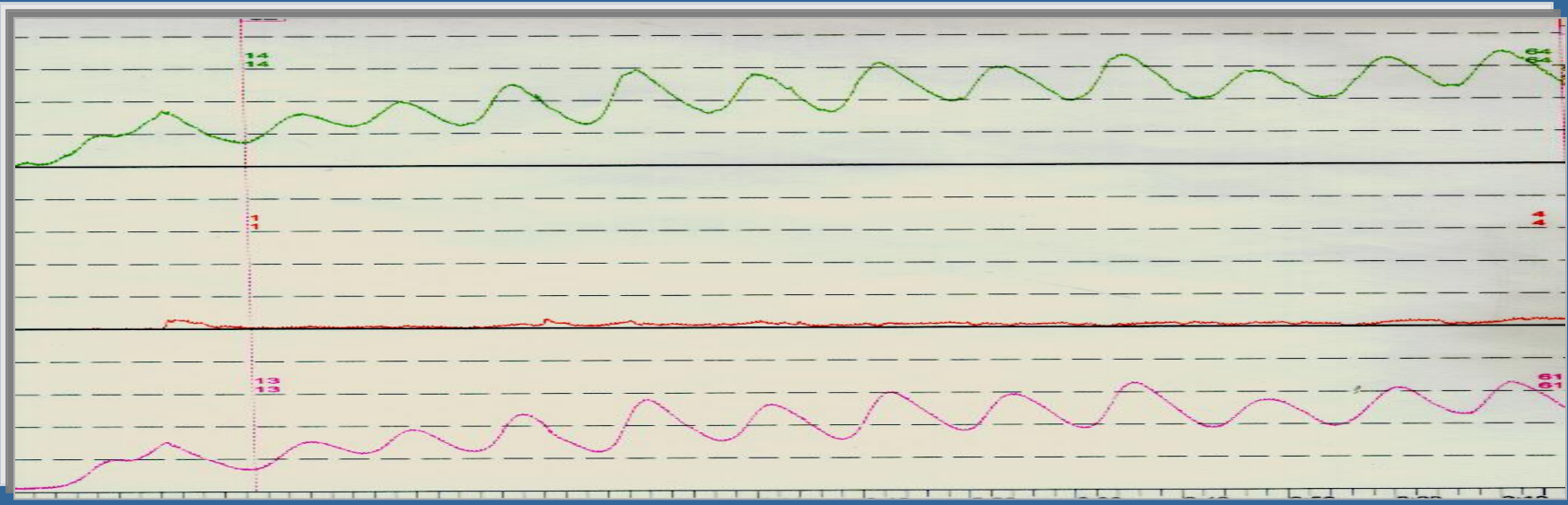
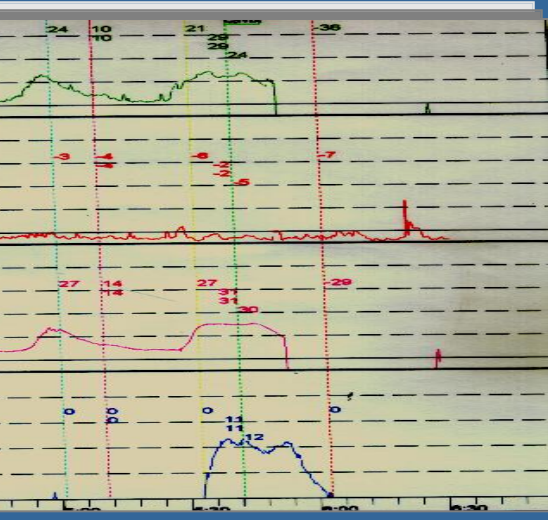
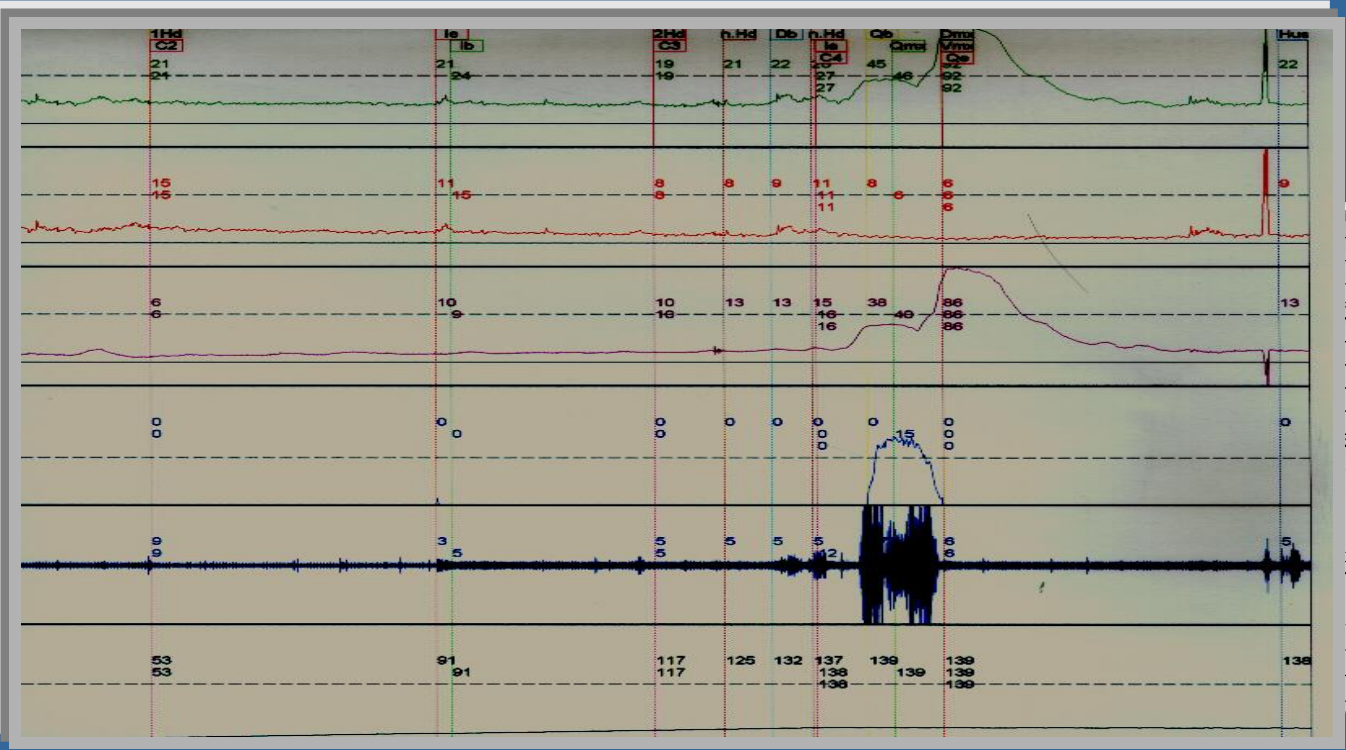


Cystomanometry



Definition:

- *maximal Bladder capacity*
- *Compliance*
- *Detrusor overactivity*



Pressure-Flow-Study

Detrusor function: normal, hypokontraktil, akontraktil

„simple” classification:

high flow, low pressure



normál

low flow, high pressure



obstruction

low flow, low pressure



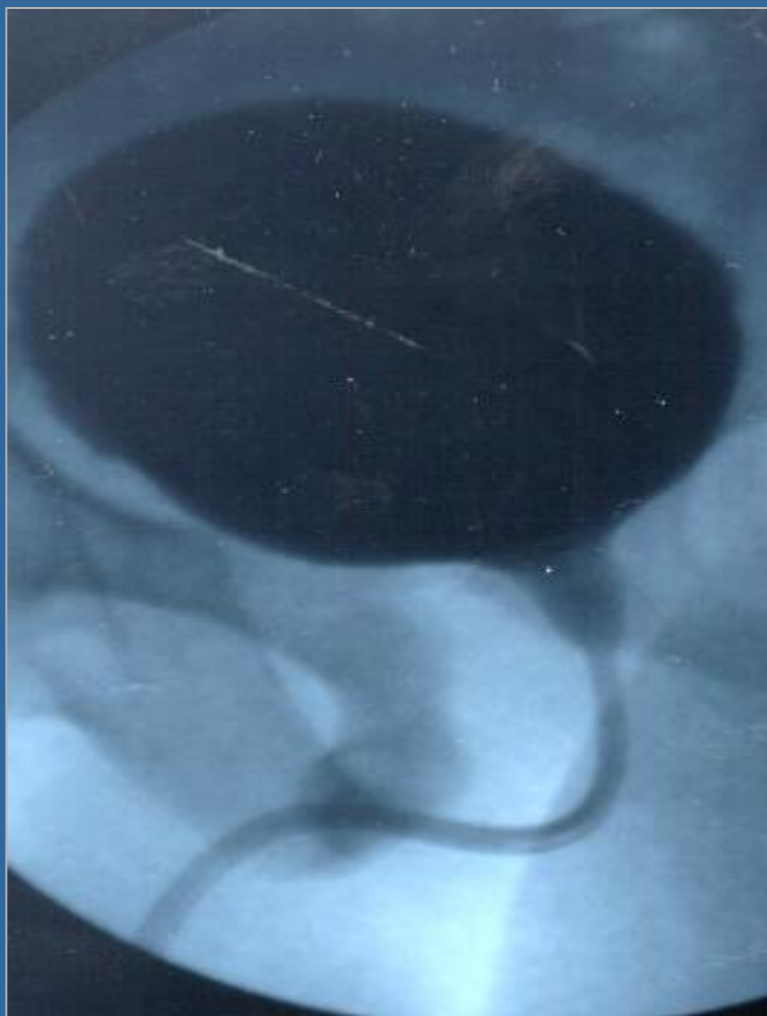
detrusor weakness

high flow, high pressure



„high-flow-obstruction”

Videourodynamics



The conservative therapy of stress urinary incontinence

Lifestyle intervention

Pelvic Floor Muscle Training (PFMT)

Biofeedback

Electrostimulation

Magnetic Stimulation

Pharmacotherapy

Urinary devices and aids

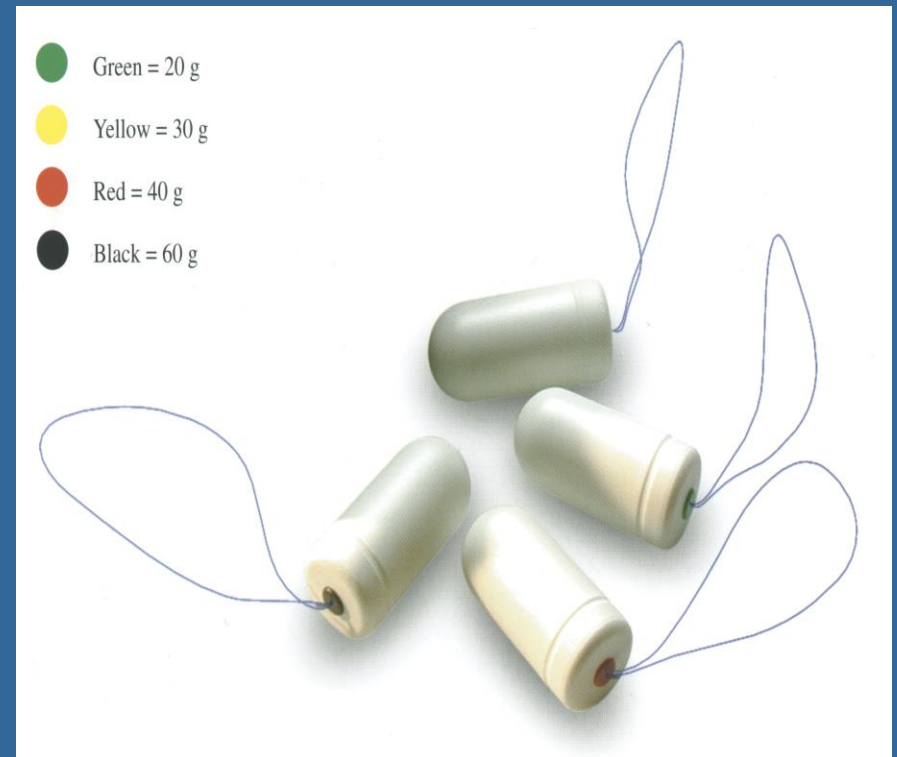
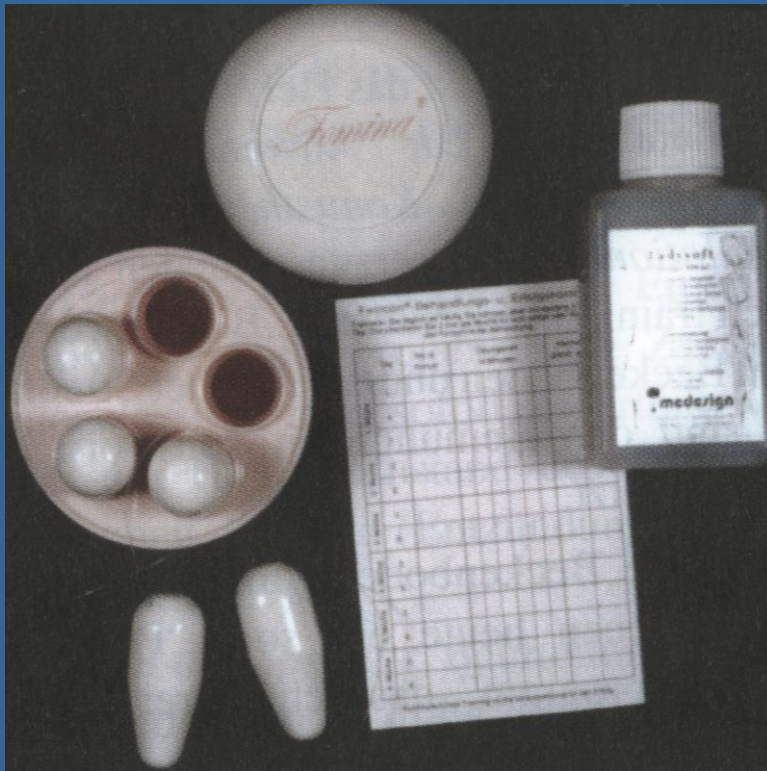
Lifestyle interventions

Weight reduction

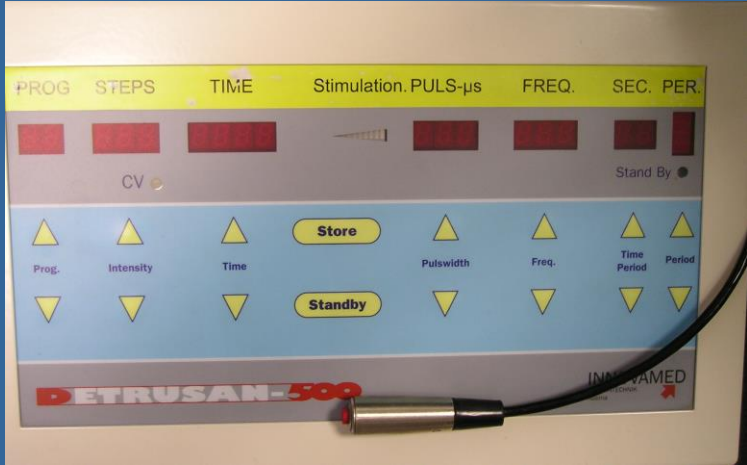
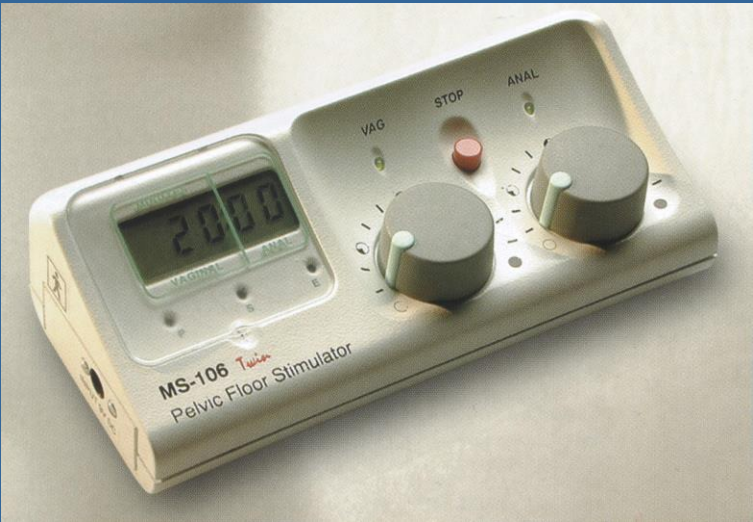
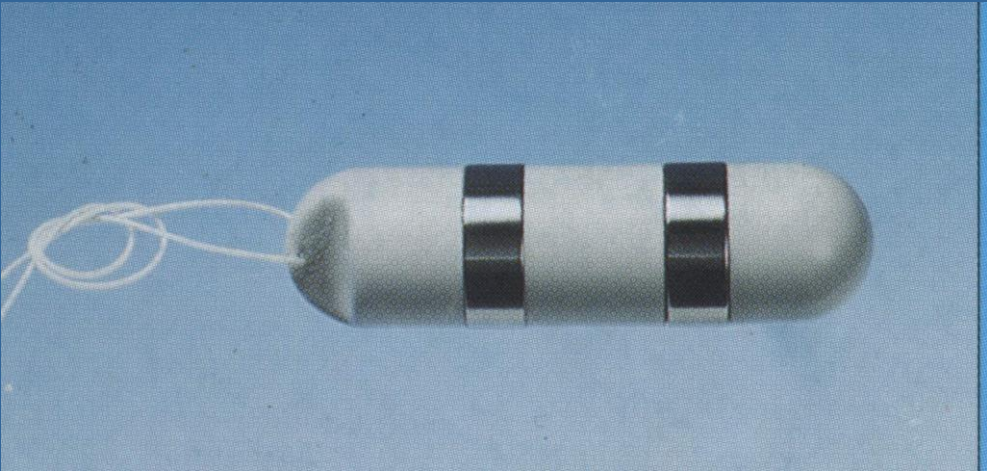
Avoiding of heavy physical activity and work

Pelvic Floor Muscle Training in prevention

Pelvic Floor Muscle Training and Biofeedback



Electrostimulation



Magnetic stimulation



Pharmacotherapy

Oestrogen

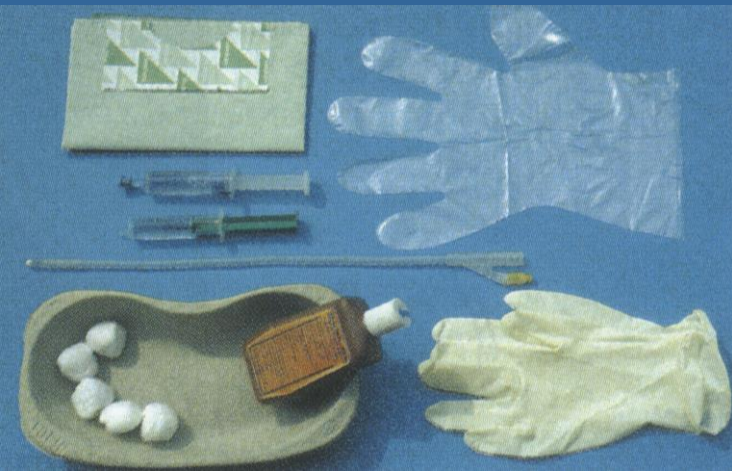
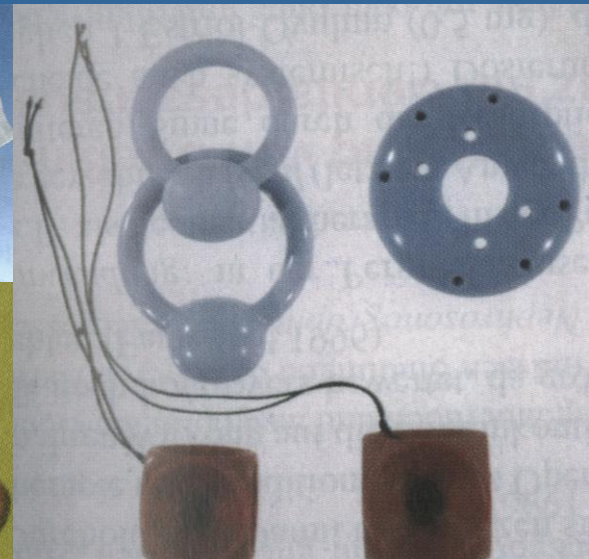
Alpha adrenoceptor agonists

Duloxetine

Incontinence devices

Only by high risk patients, who are not suitable for any other therapy

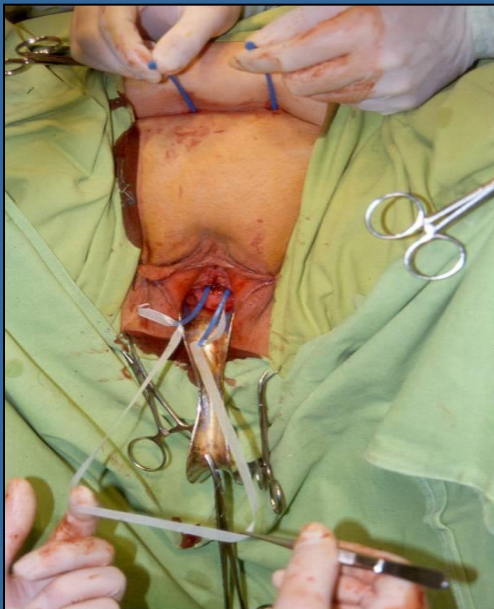
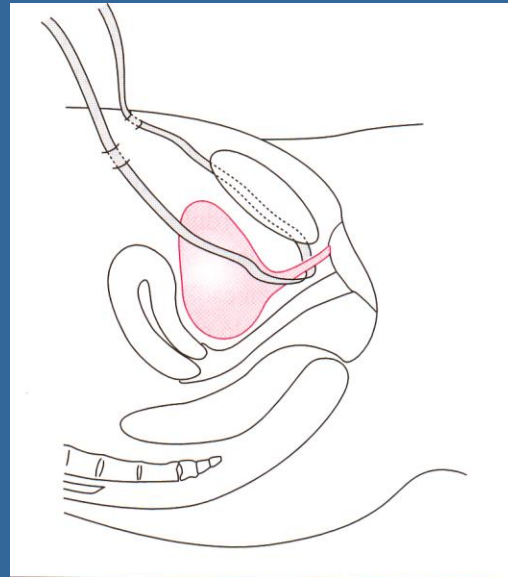
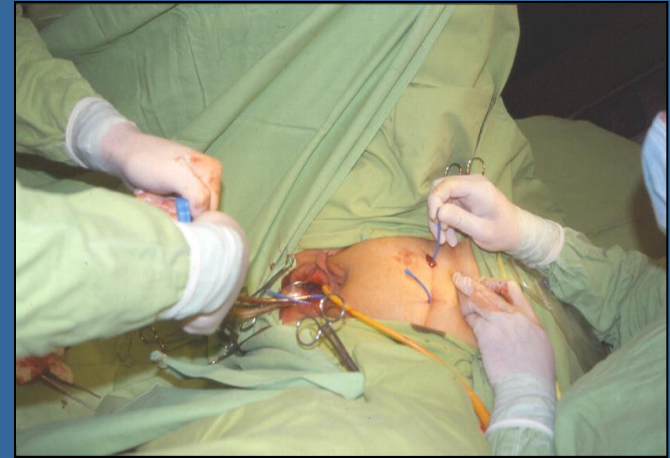
Pads
Condom urinal
Epicystostomy
Urethral catheter



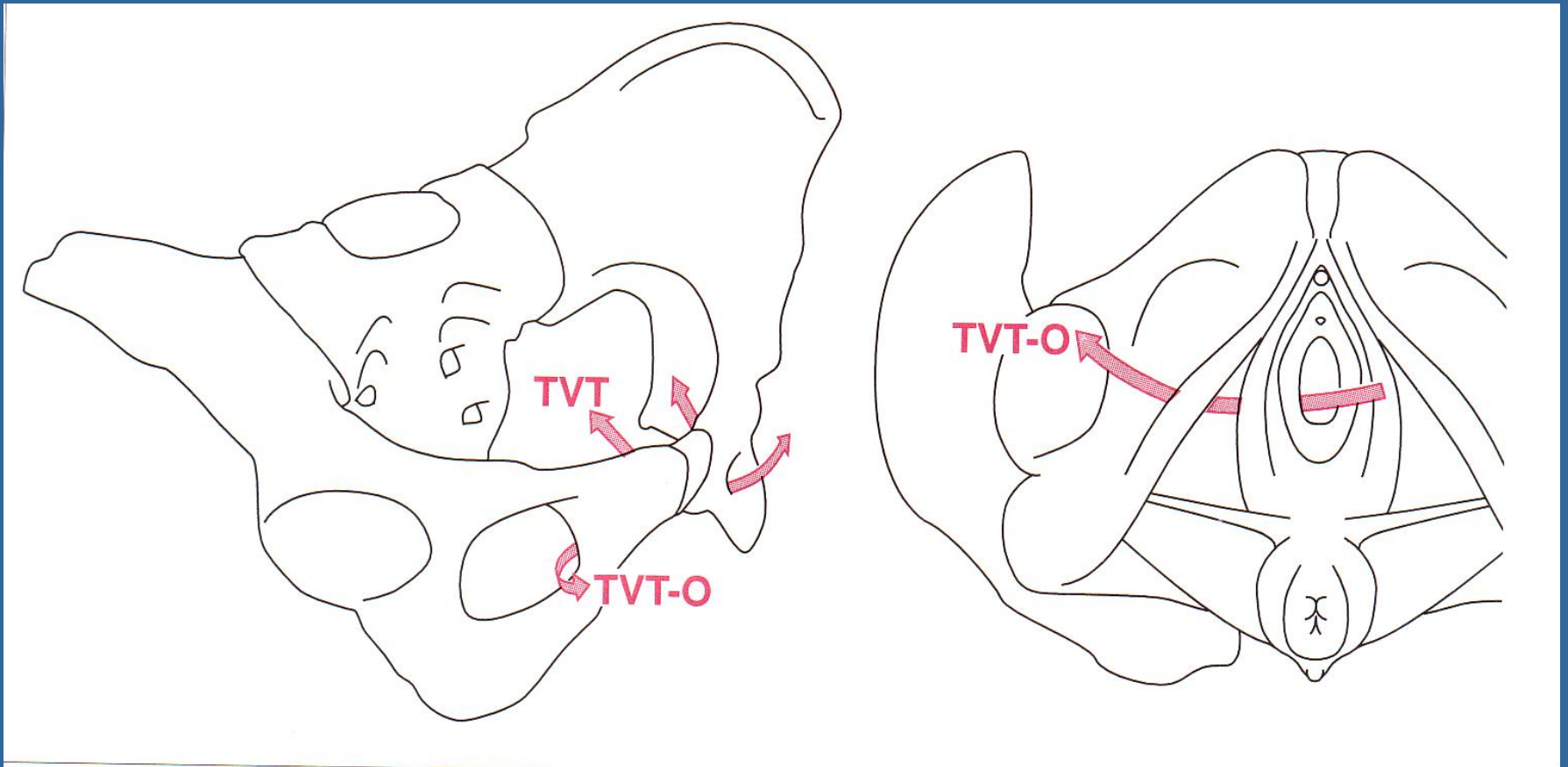
Surgical treatment of female stress urinary incontinence

- Submucosal urethral bulking agents
- Anterior vaginal repair
- Colposuspension
- Slings
- Artificial sphincter implantation

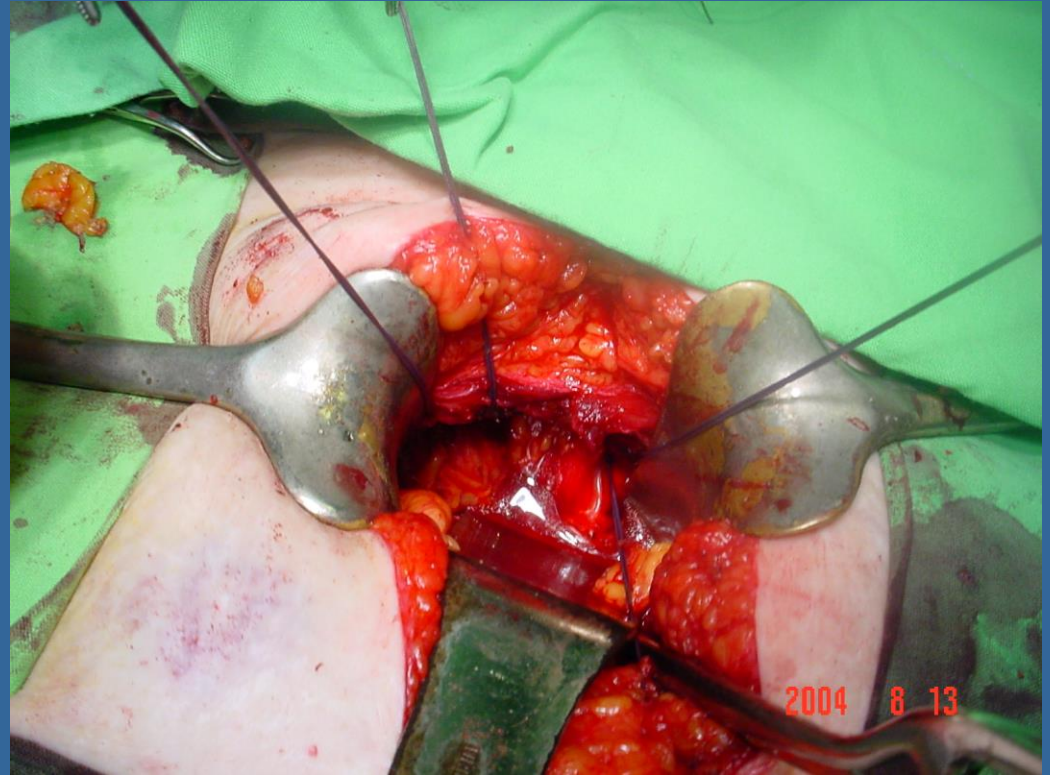
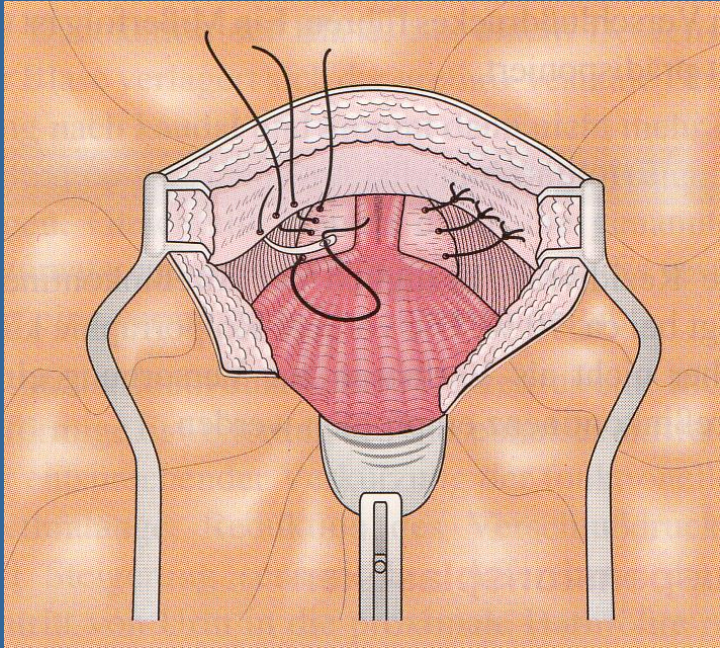
Tension free vaginal tape (TVT)



TVT and Transvaginal obturator tape

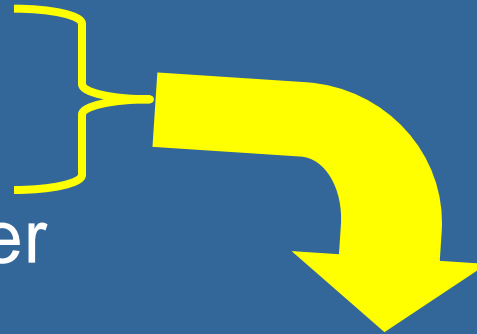


Colposuspensions (Burch, MMK)



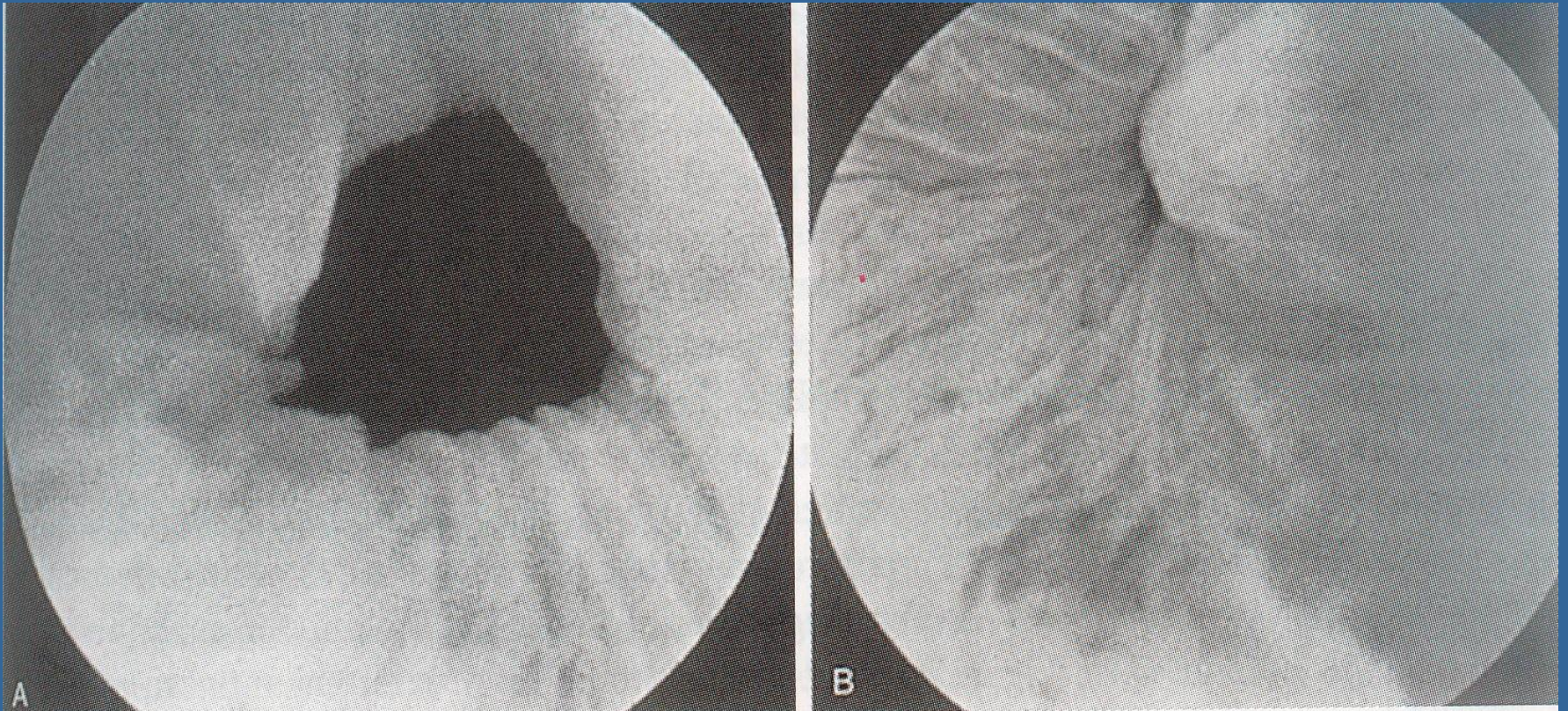
Surgical treatments of male stress incontinence

- Urethral bulking agents
- Periurethral balloons
- Male slings
- Artificial urinary sphincter (AUS)



**Adjustable Continence Therapy
(ACT)
Readjustable Slings**

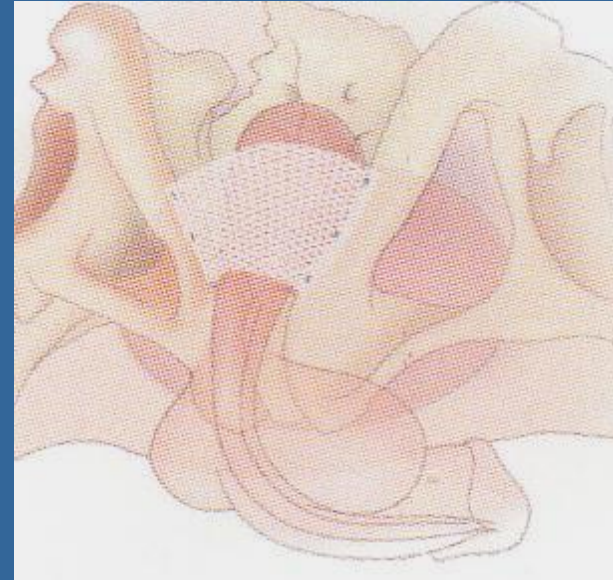
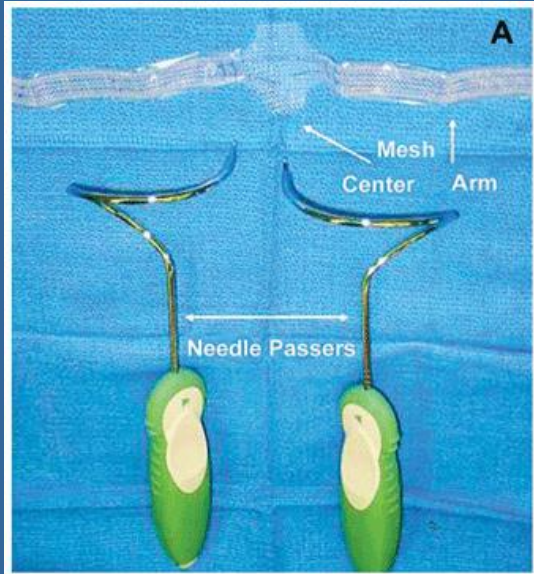
Urethral bulking agents



Adjustable Contenance Therapy (ProACT)



Male slings



Artificial Urinary Sphincter (AUS)

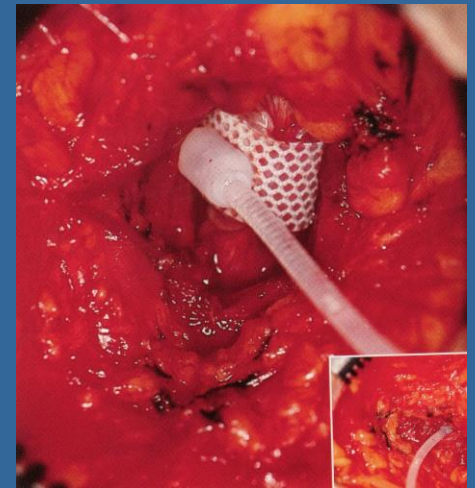
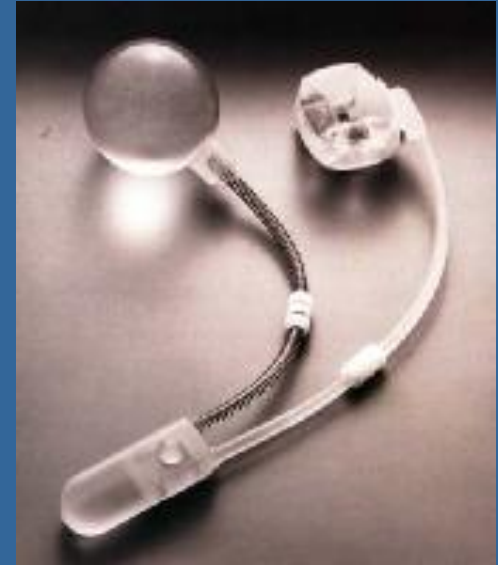
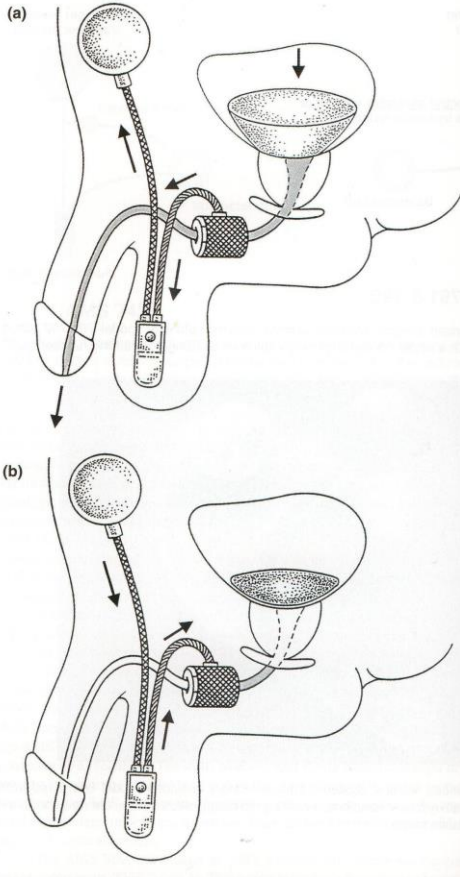
AMS 800 artificial sphincter

Success rate: 90%

Complication rate: 40 %

Reoperation: 12,5-25 %

Disadvantage: high cost



The therapy of urge urinary incontinence

Solution of etiological factors

Bladder and micturation training

Pharmacotherapy

Electrostimulation

Neuromodulation

Supplementary therapy

Behavioural therapy

To correct of incorrect habits regarding fluid in take

Bladder training

Toilette training

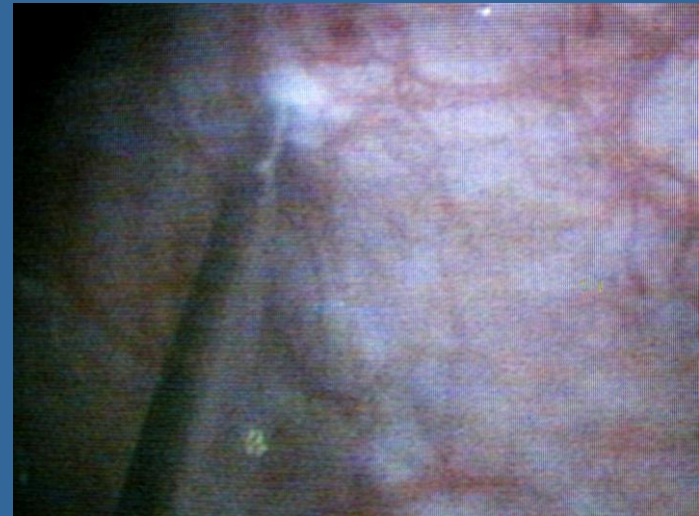
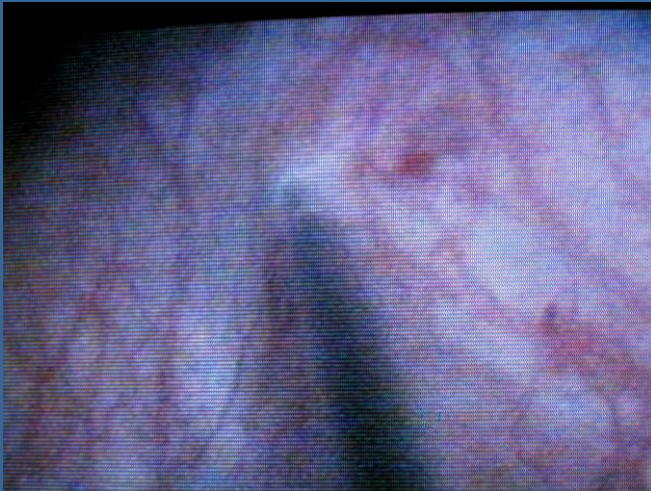
Pharmacological Treatment of urge urinary incontinence

Anticholinergics

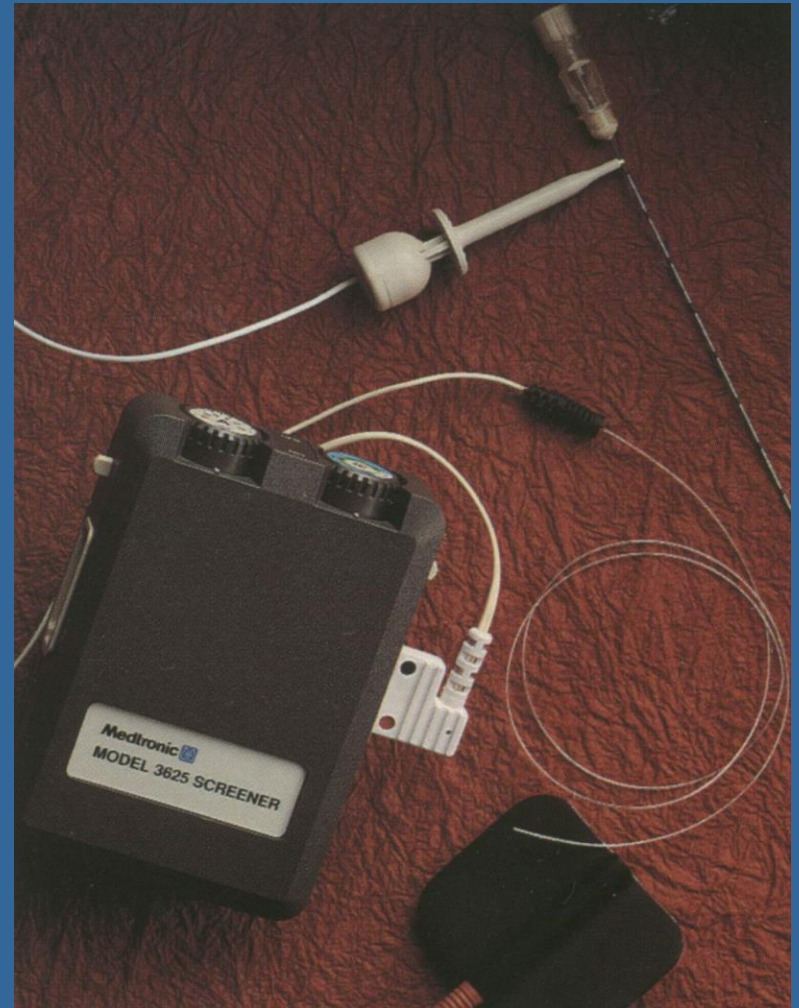
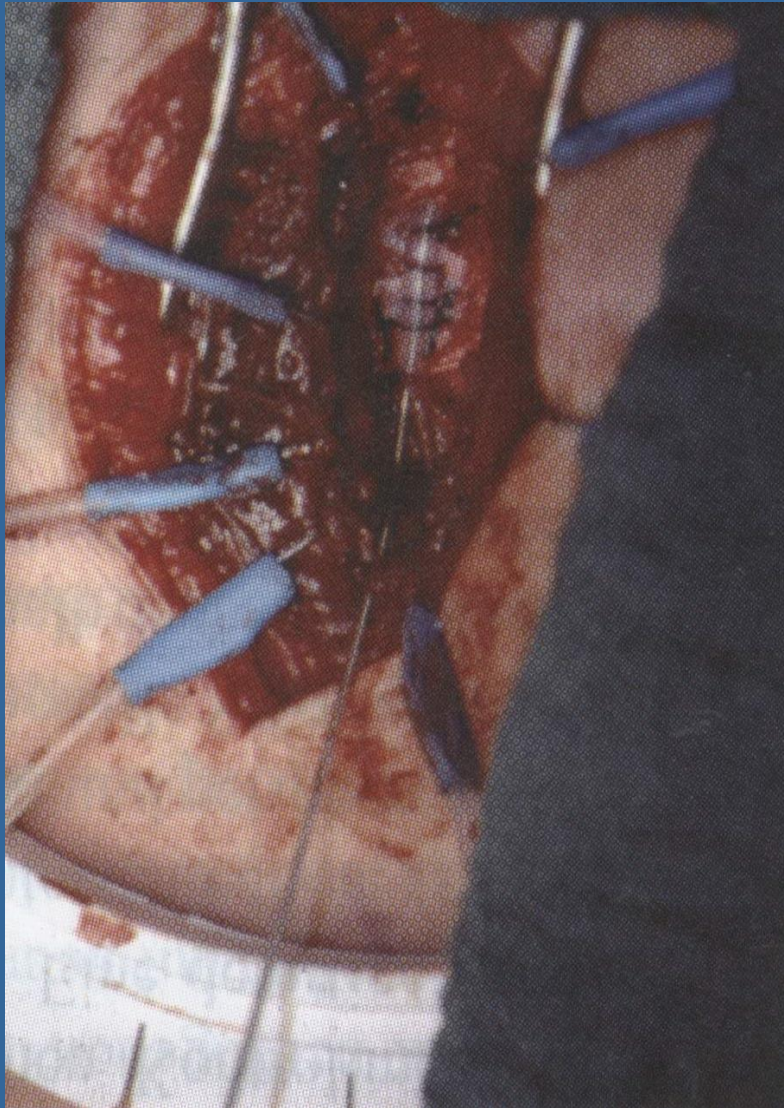
Medications with mixed spectrum

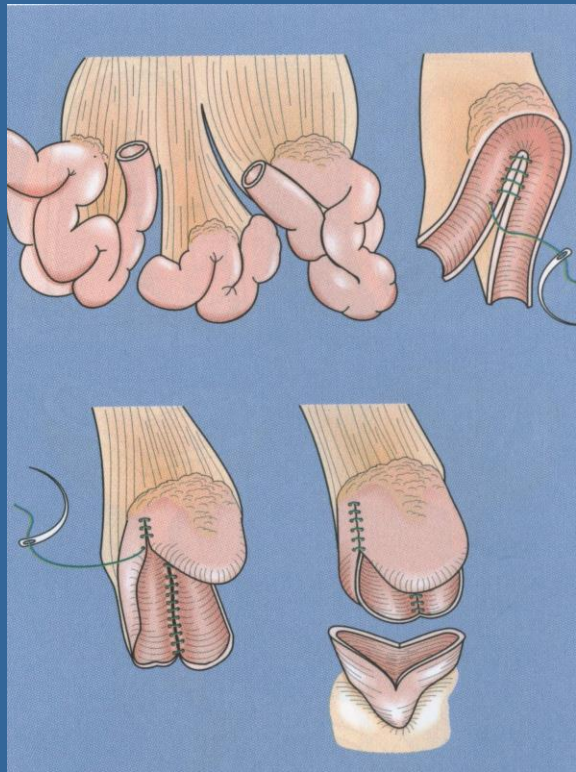
Oestrogens

Botulinum toxin A Injection

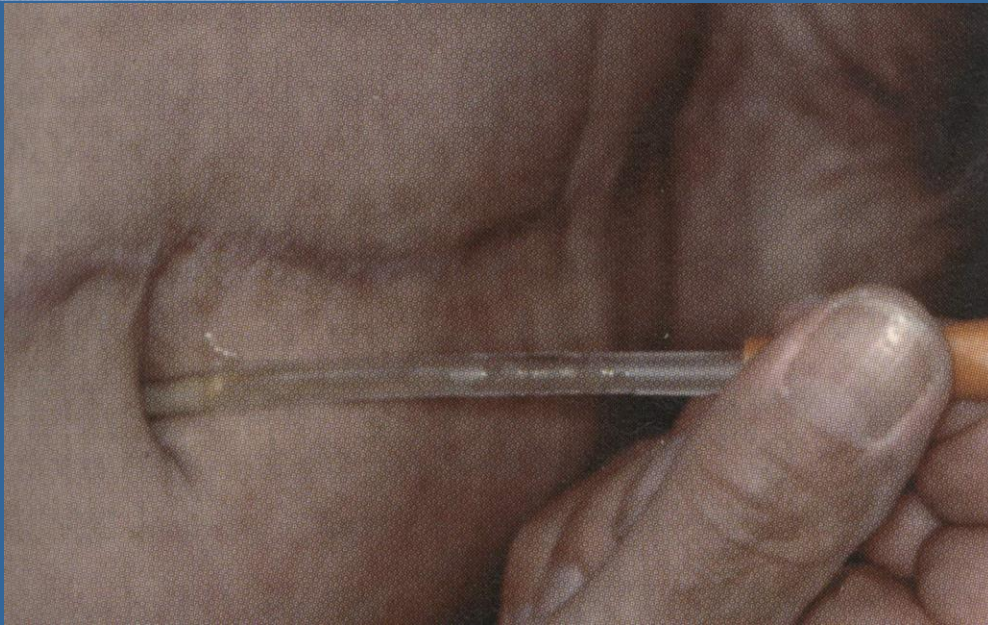
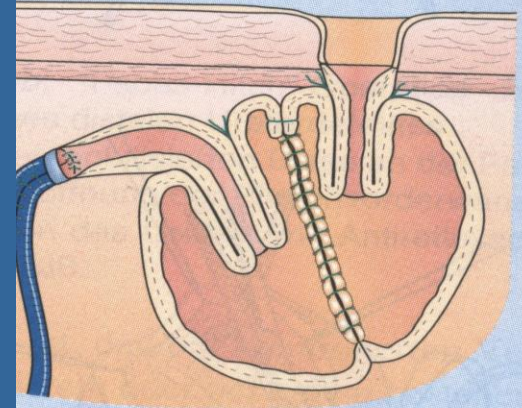
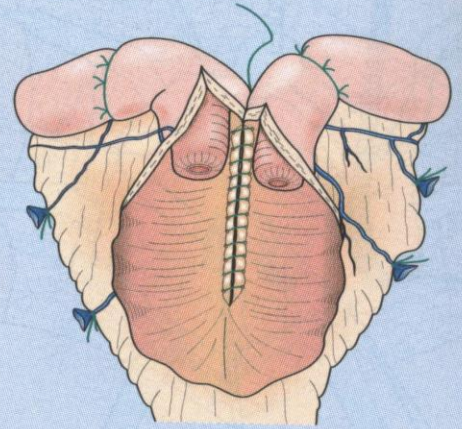
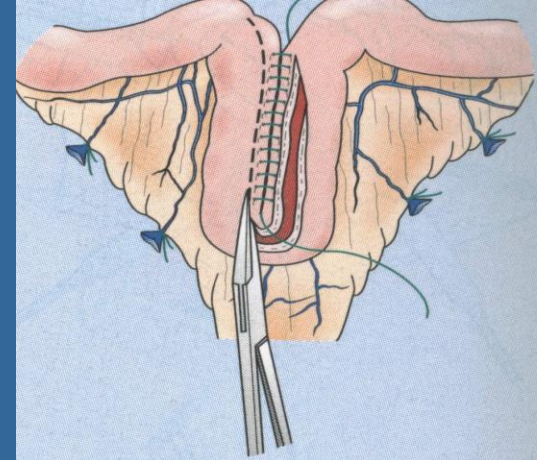


Sacral Neuromodulation





Bladder Augmentation



**Thank you for
your attention !**

