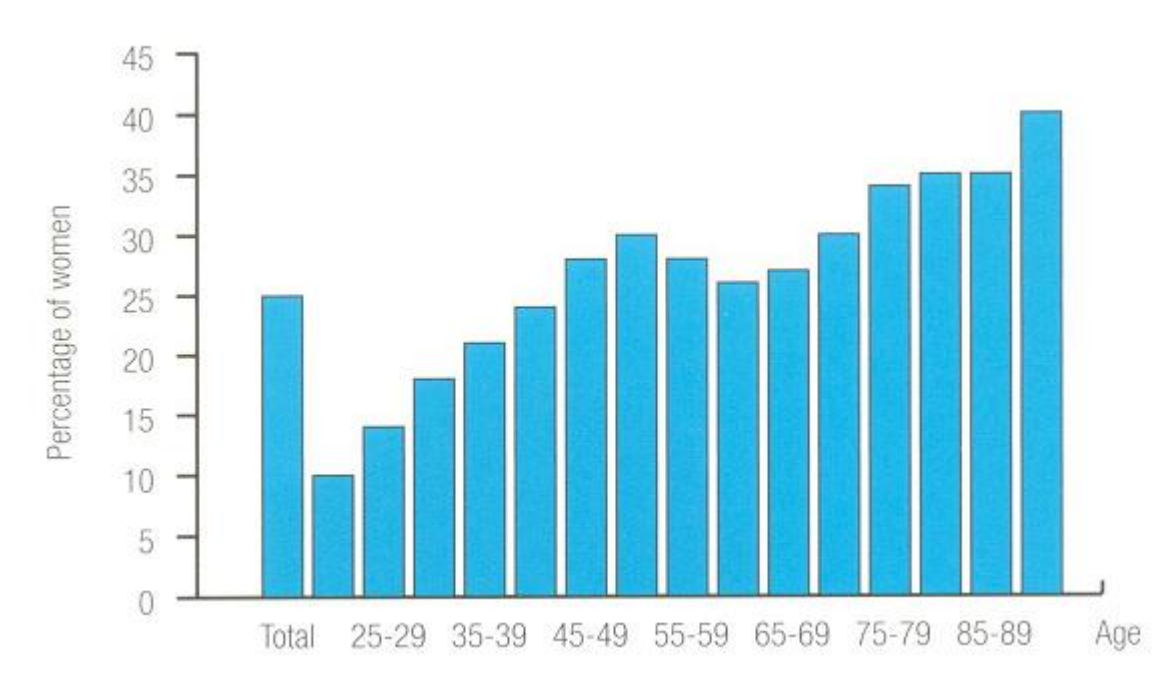
Urinary incontinence in women

Ayman Qatawneh
University of Jordan

INTRODUCTION

- Approximately 13% of population affected by SUI (Hannestad, Epincont Study 2000)
- Lifetime risk for surgical treatment for SUI in women: 4% (Olsen 1997)
- Conservative management avoids the risks / complications of invasive procedures
- Modern procedures 'minimally invasive' with minimal complications

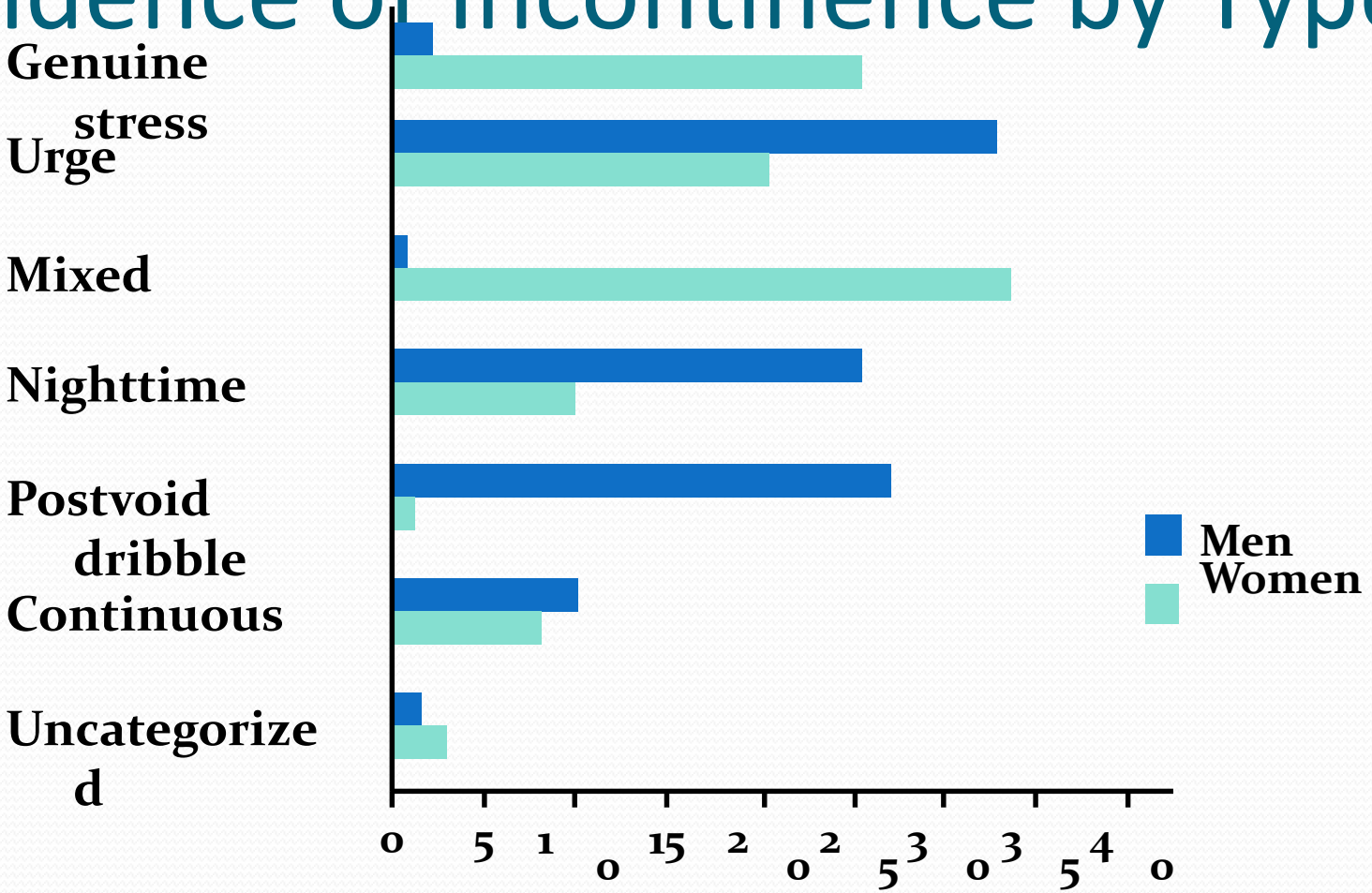
Prevalence


Percentage of women
45
40
35
30
25
20
15
10
5
0
Total
25-29
35-39
45-49
55-59
65-69
75-79
85-89
Age

Epidemiology of urinary incontinence in Jordanian women. Shakhatreh FM … Saudi Med J. 2005 May.

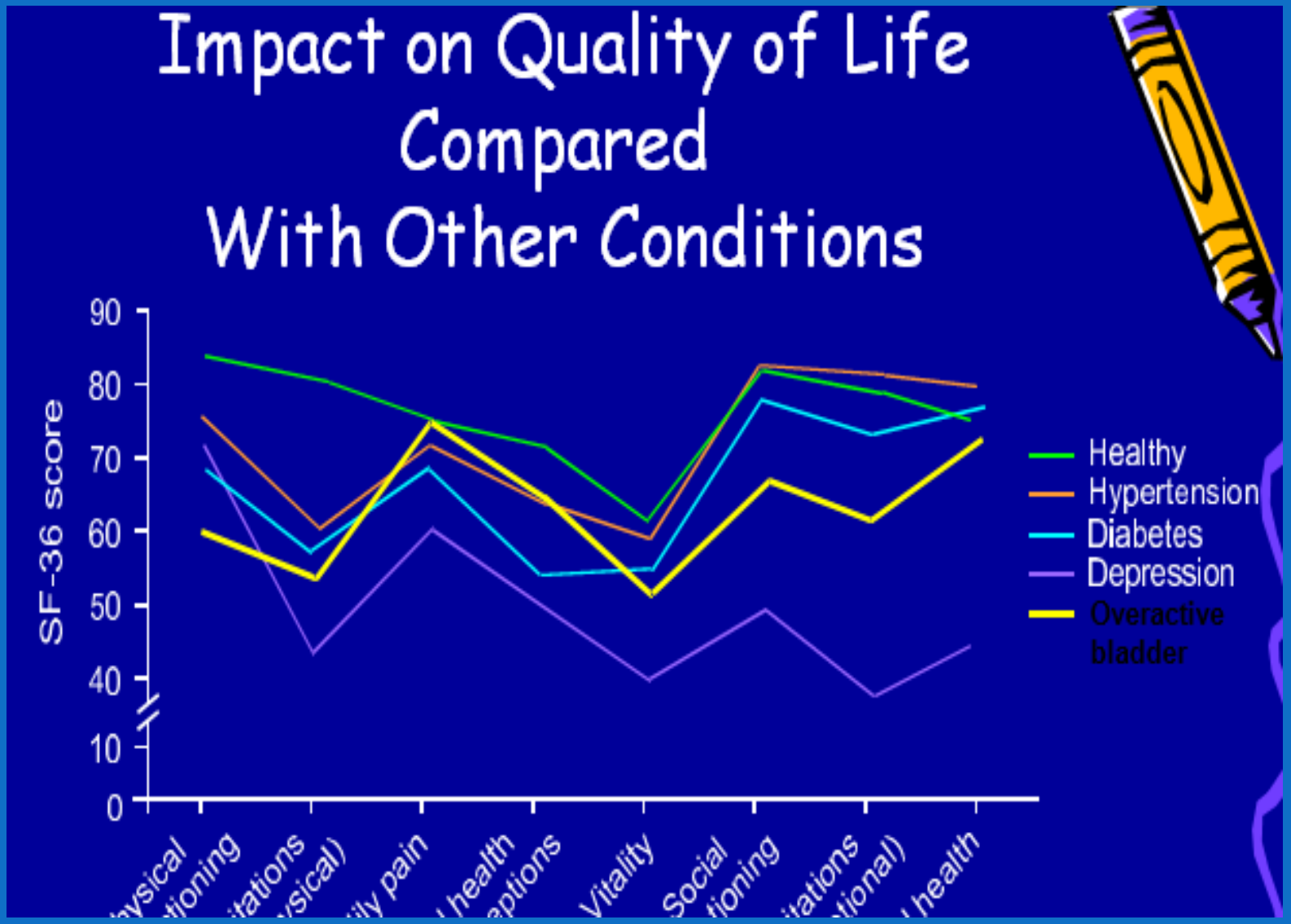
- Sample from south of JORDAN.
- Age 50-65 years.
- Number (182).
- Results: 1/3 had urinary incontinence.
  - 23.1% had stress UI.
  - 26.4% had urge UI.
  - 18.1% had mixed type.
  - If parity >5 ……43.5%
  - If Menopause….39.7%
  - If obese…… 39.3%

Incidence of Incontinence by Type



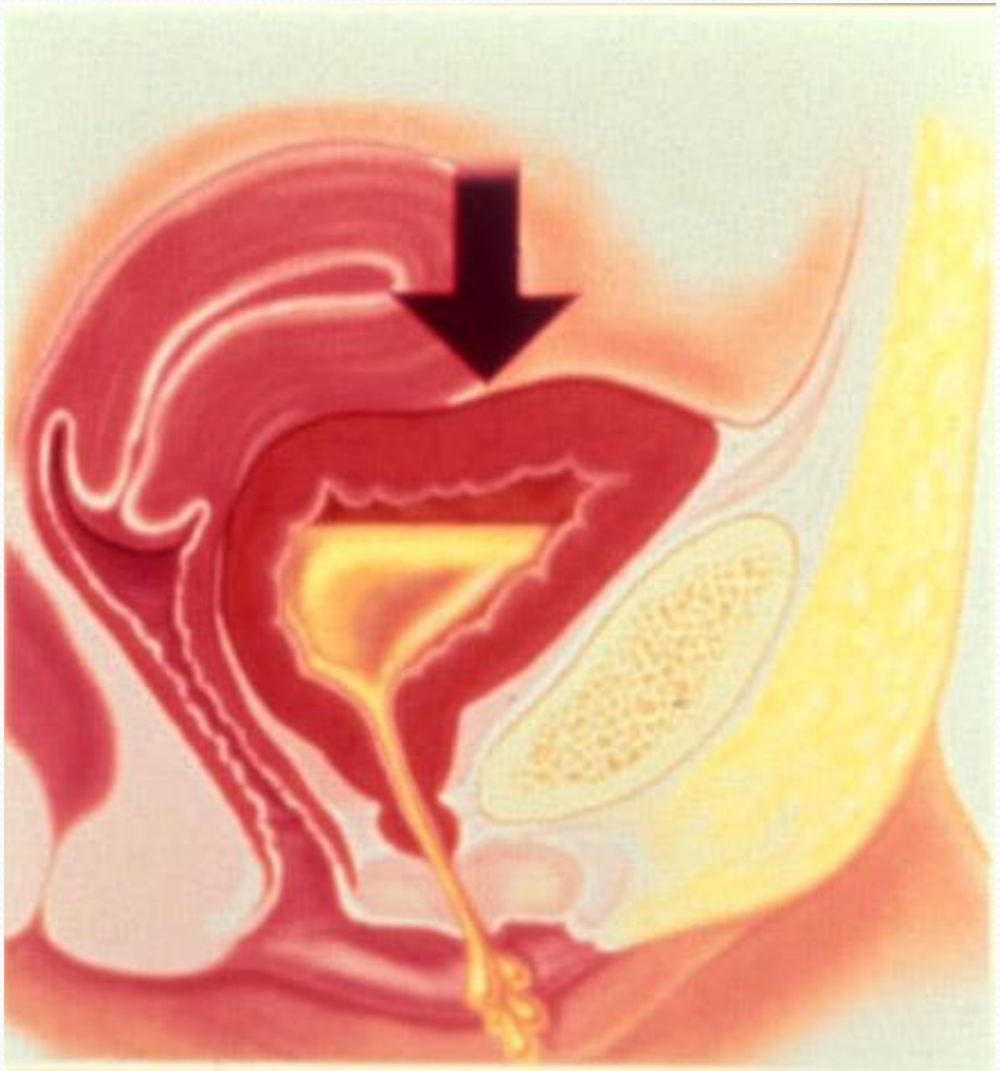
Feneley RL et al. *Br J Urol.* 1979;51:493-496.

Impact on Quality of Life Compared With Other Conditions

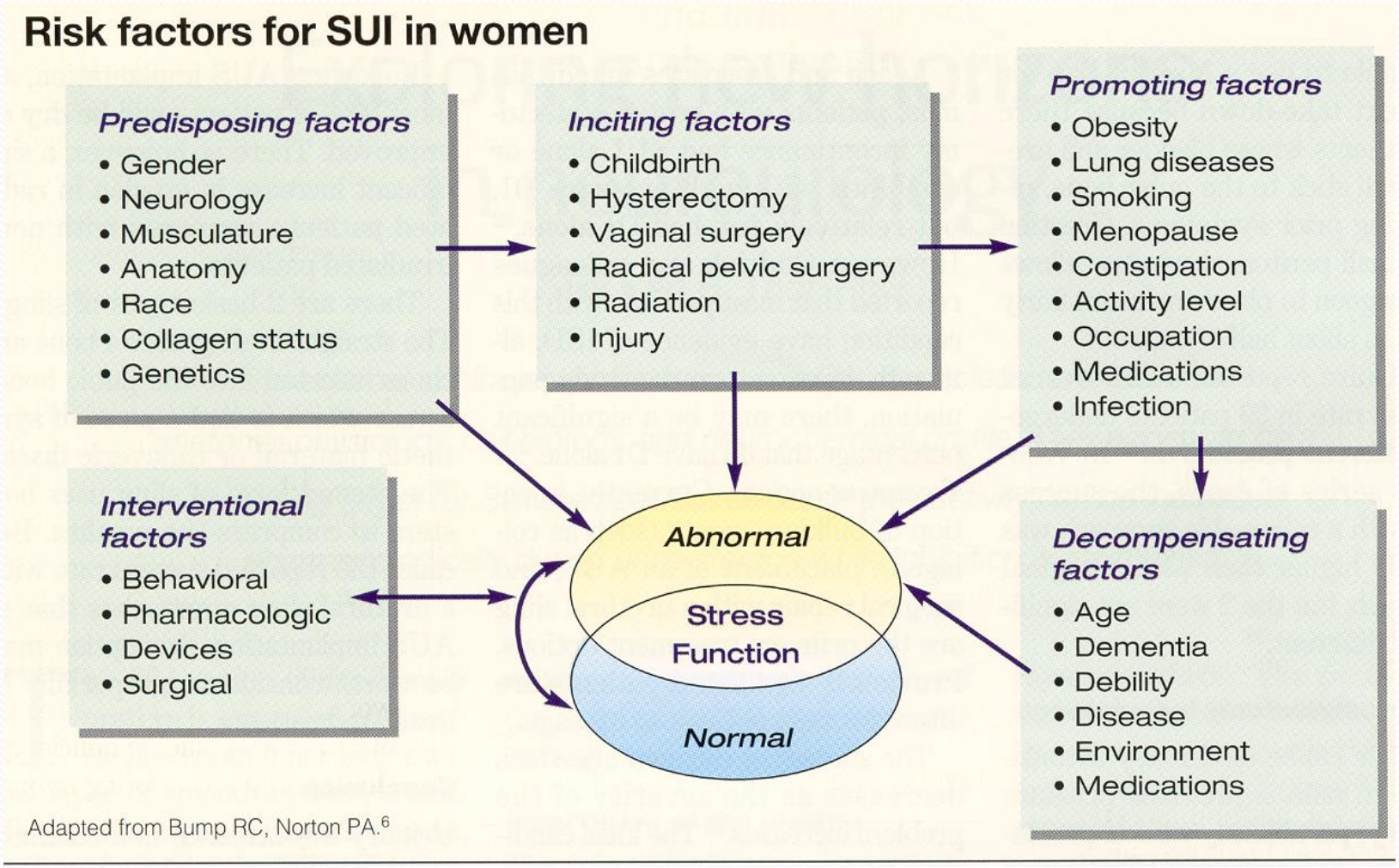


Stress Incontinence

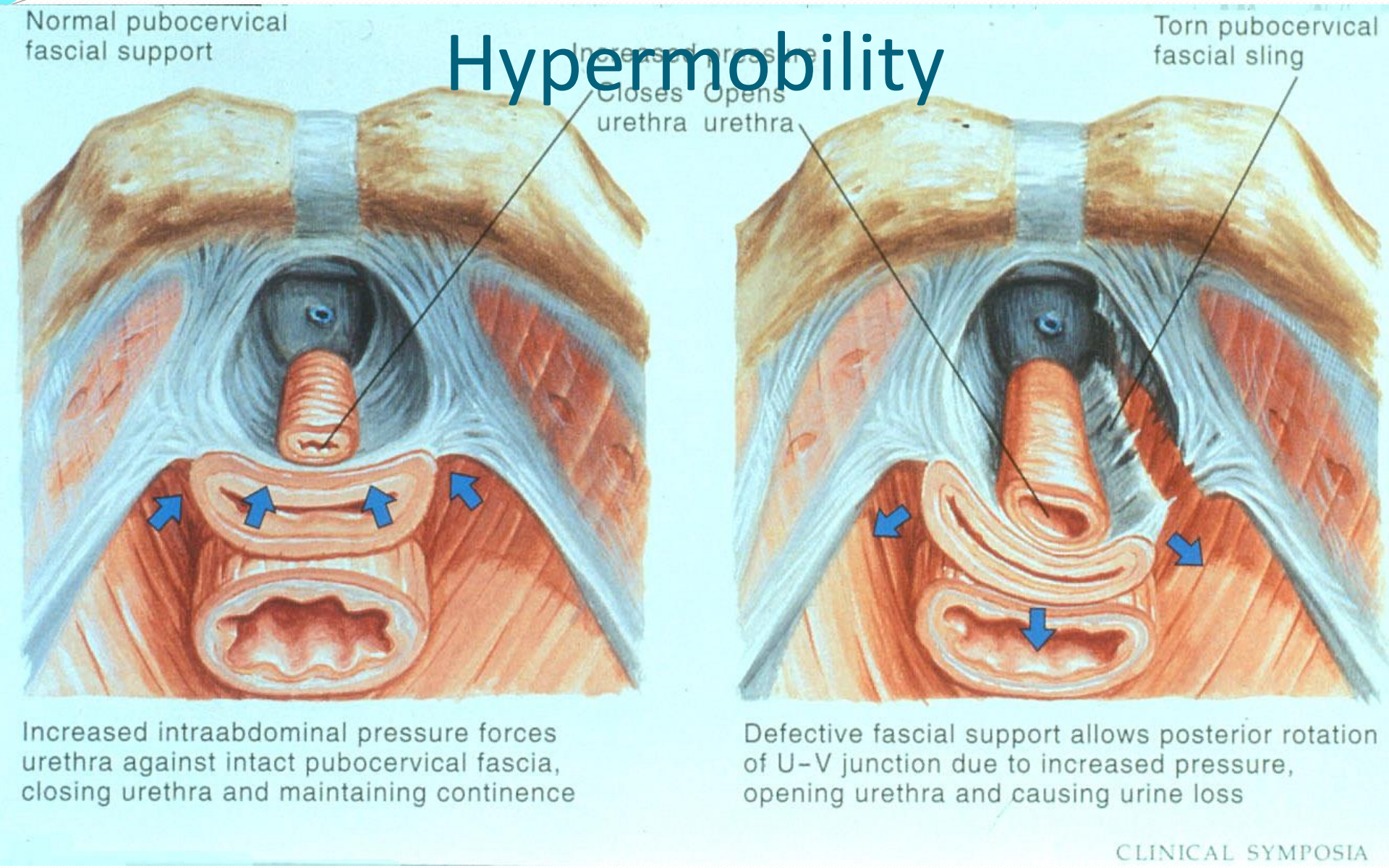
The involuntary loss of urine during coughing, laughing, sneezing or other activities that increase abdominal pressure



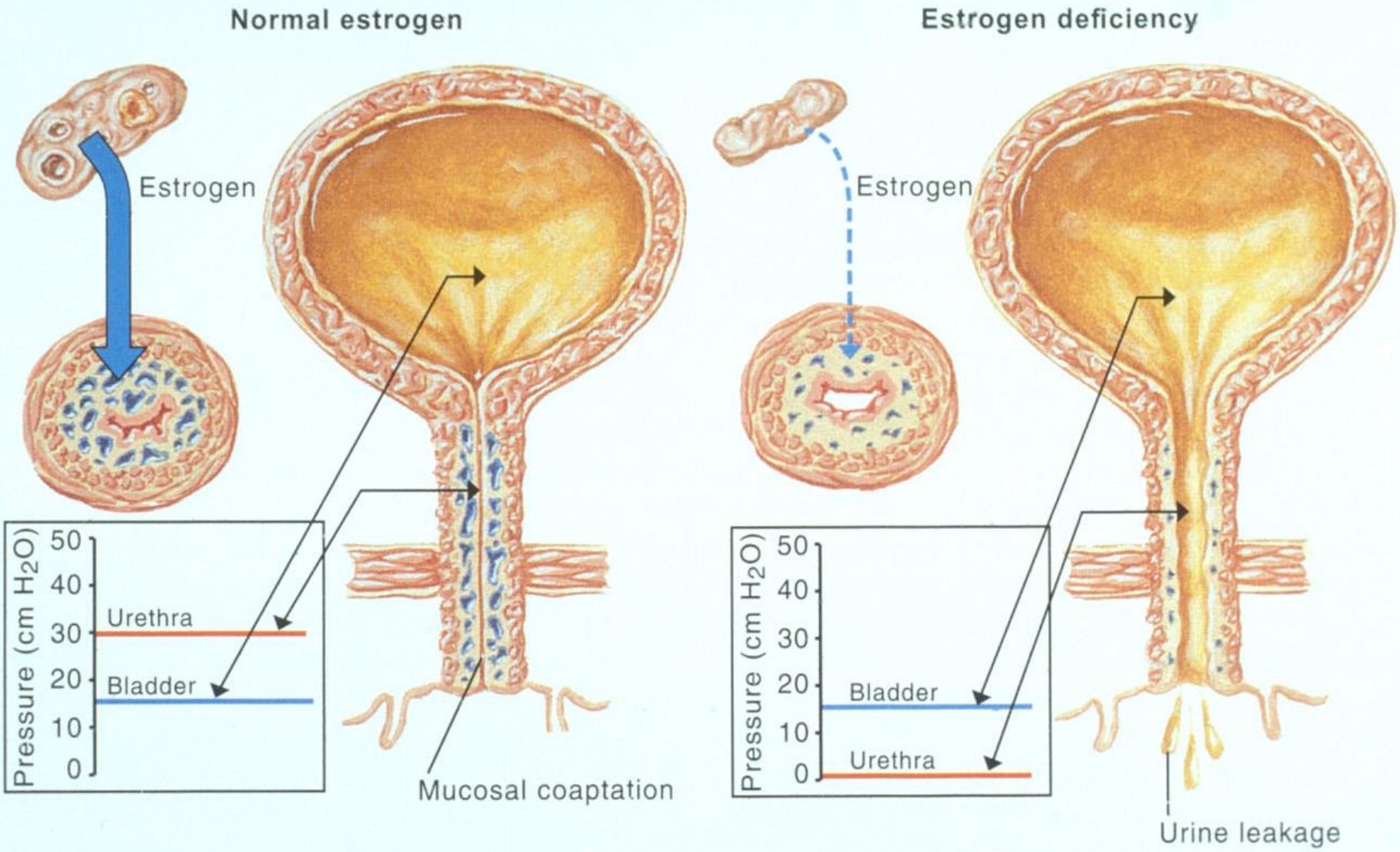
Risk factors for SUI



Hypermobility

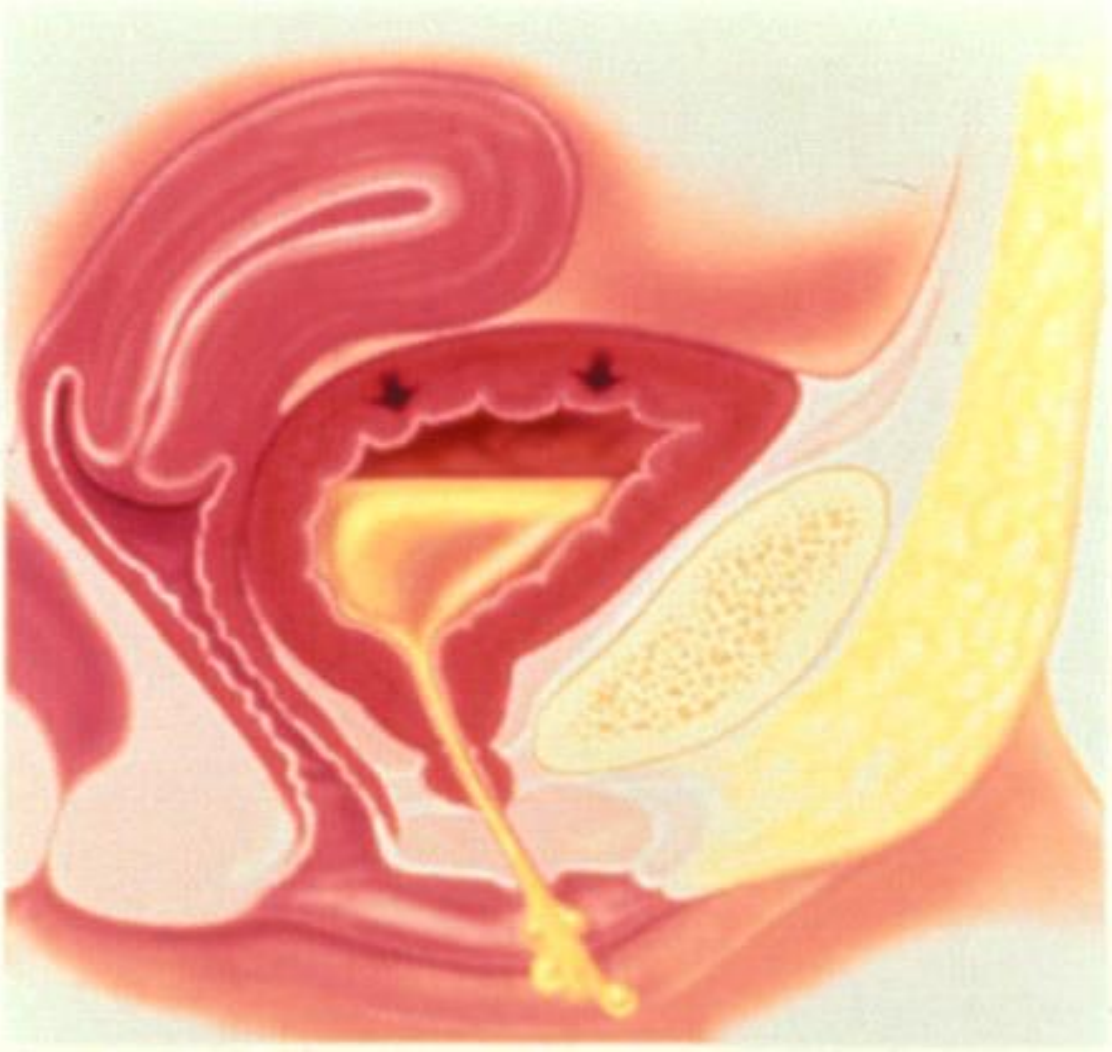


ISD (intrinsic sphincter deficiency)



Urge Incontinence

The involuntary loss of urine associated with the abrupt and strong desire to void (urgency)

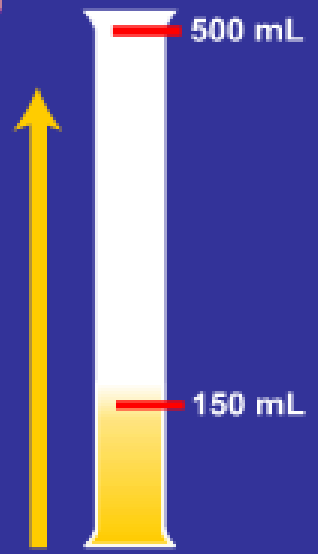


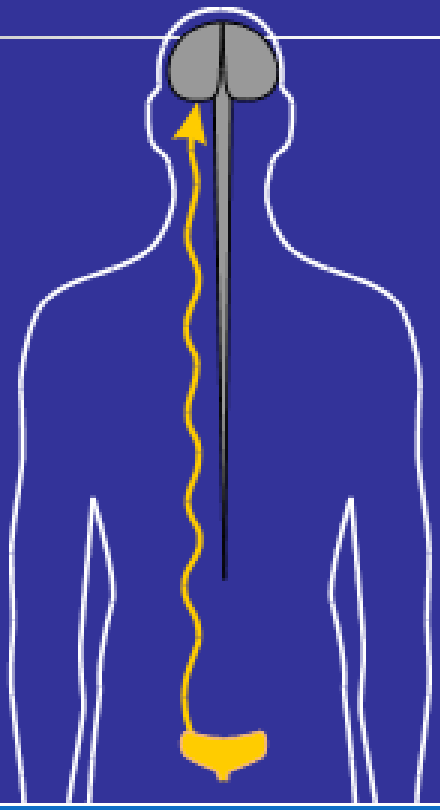
What is Overactive Bladder?

- A Symptom – based condition.
- Characterized by:
  - Increased urinary frequency
  - Urgency
  - With or without Urge incontinence

Overactive Bladder

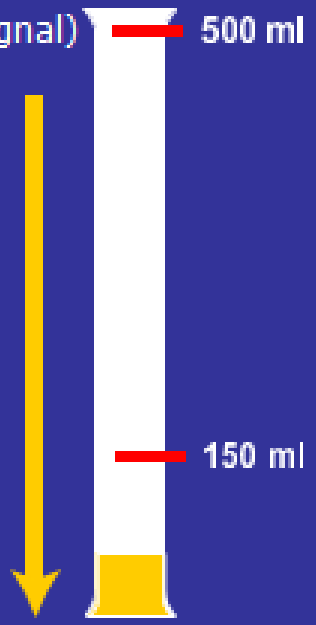
- Sudden desire to void
- usually at low volume
- (yellow arrow)

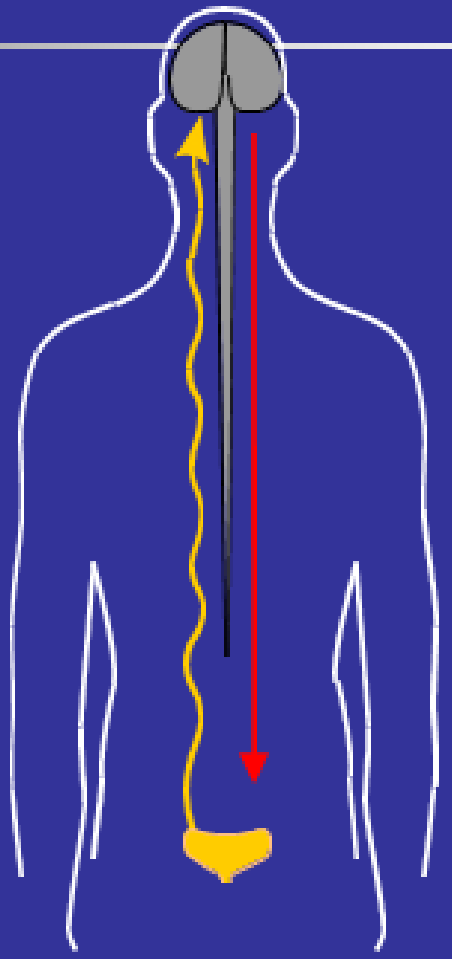




Overactive Bladder

Patient able/unable to inhibit–involuntary voiding may occur (red arrow–activating signal)





Overflow Incontinence

The involuntary loss of urine that occurs when the bladder overfills. The bladder never empties completely, so it is constantly filling

Evaluation

History

-Nature of Incontinence

- Frequency
- Nocturia
- Leakage with cough, sneeze or exercise
- Urgency
- Uncontrollable leakage
- Timing
- Awareness of leakage
- Severity of Incontinence
- Pad use and number

Past Medical History

- Neurologic Conditions
  - Multiple Sclerosis
  - Spinal Cord Injury
  - Lumbar Disc Disease
- Previous Vaginal/Bladder/Urethral Surgery
- Other Pelvic Surgery
- Radiation Therapy
- Other Significant Disease
- Obstetric History

Pelvic Exam

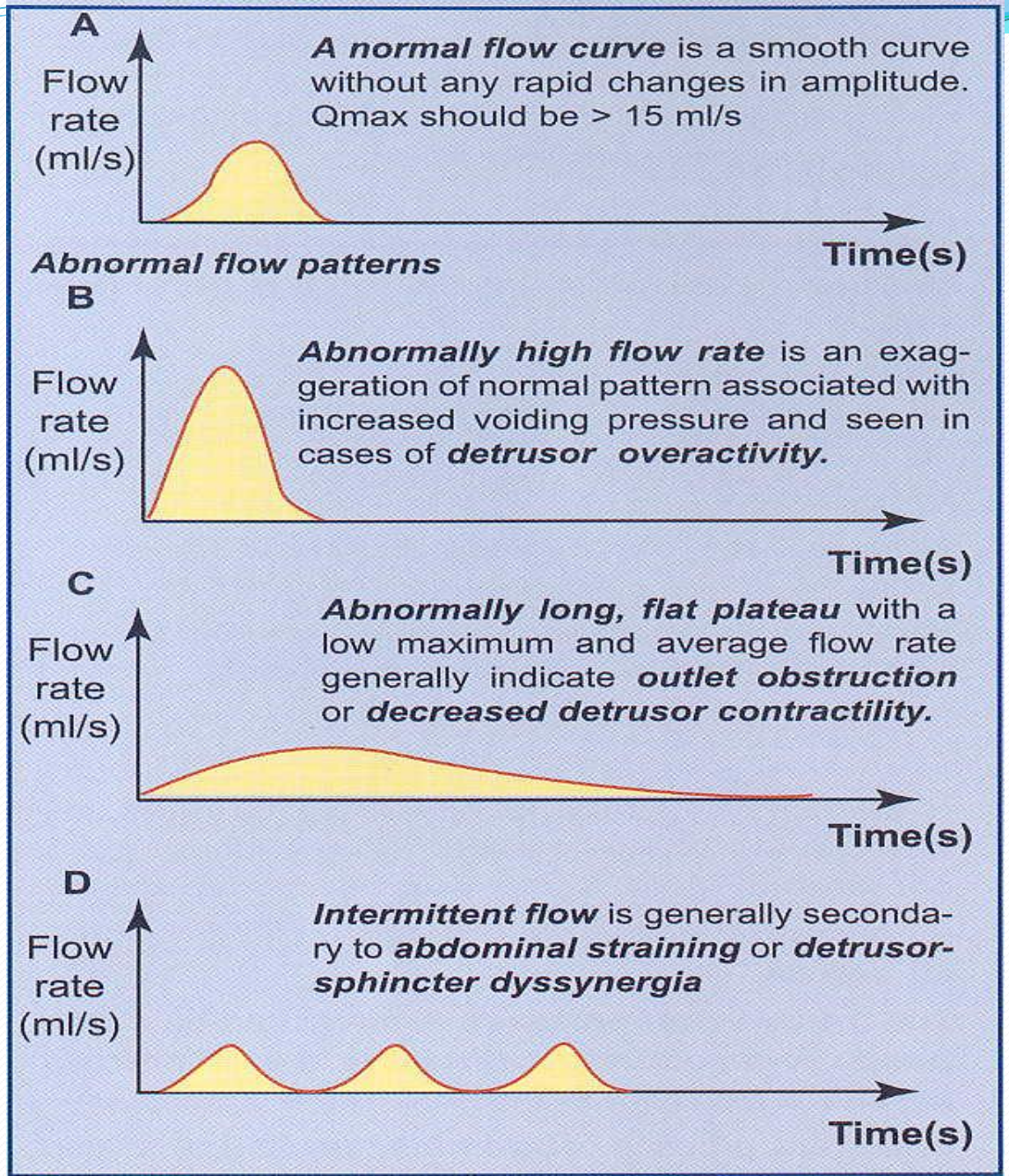
External Genitalia
Perineal body
Vaginal epithelium
Urethral meatus
Hyper mobility
Post – void residual
Prolapse
Urethral palpation
Stress test
Eyeball urodynamics

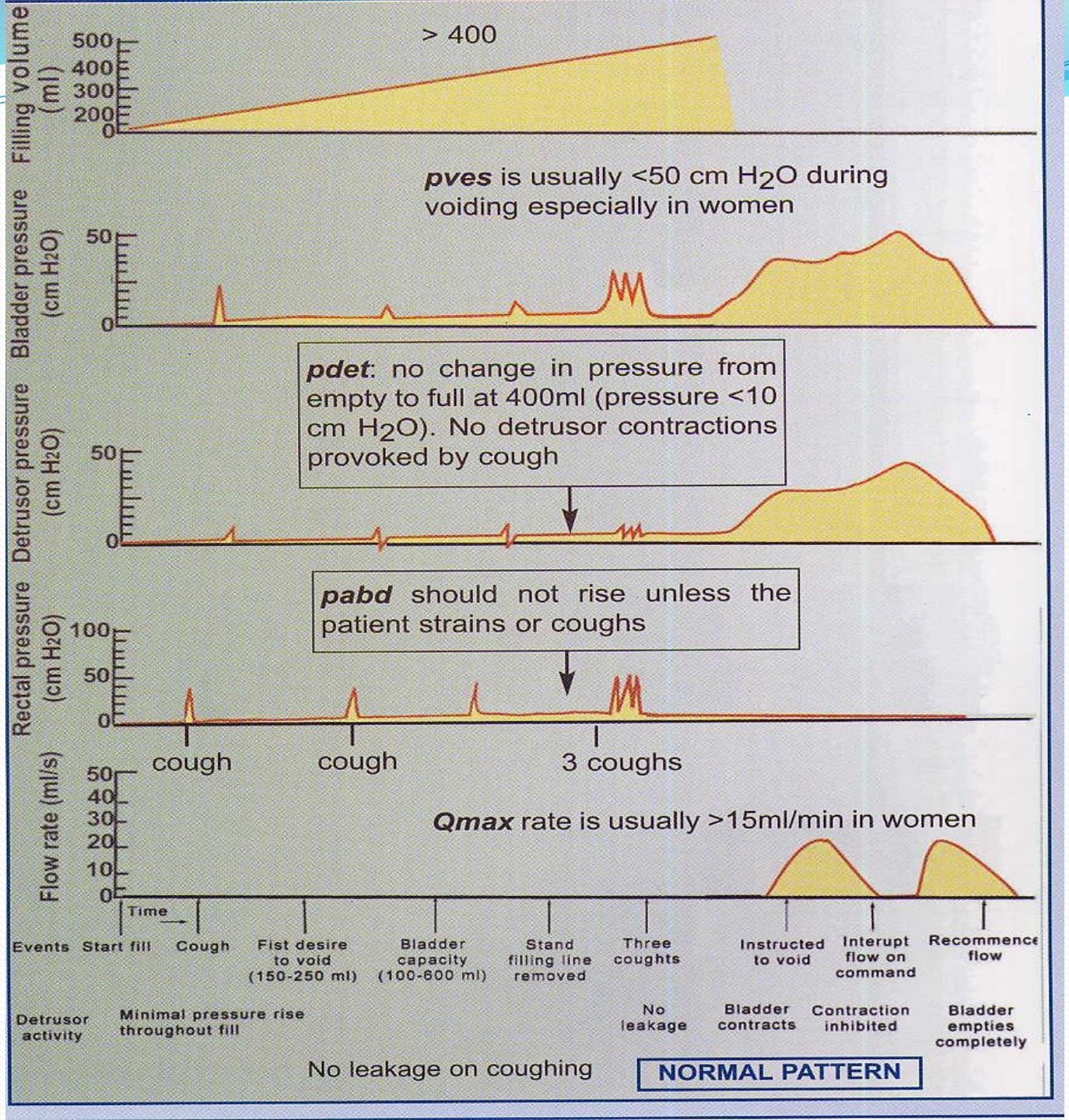
Detrusor Overactivity

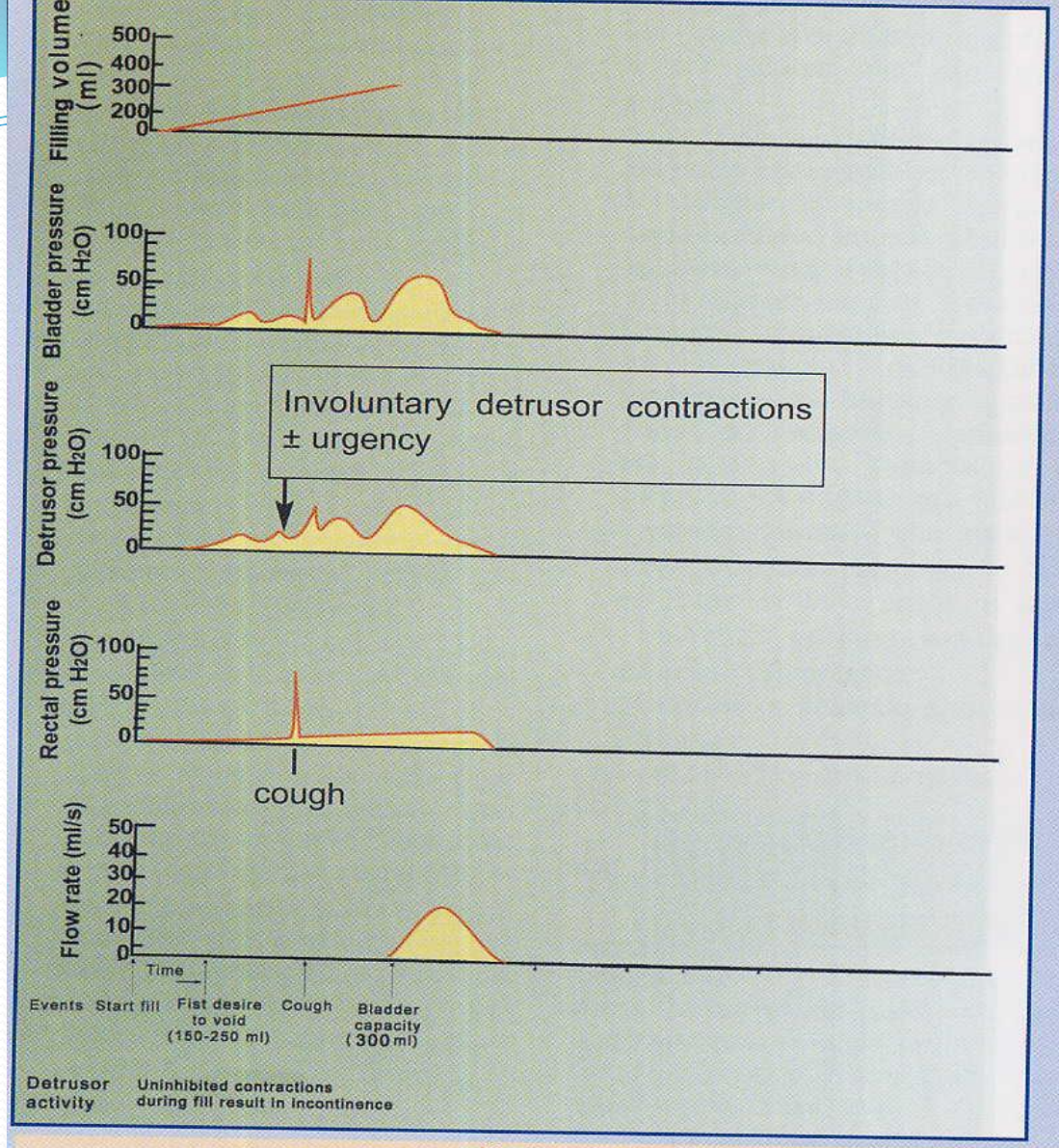
'a urodynamic observation characterised by involuntary detrusor contractions during the filling phase which may be spontaneous or provoked'

Abrams et al, 2002

III Characteristic flow patterns




Filling volume (ml)
500
400
300
200
0
> 400
pves is usually <50 cm H2O during voiding especially in women
Bladder pressure (cm H2O)
50
0
pdet: no change in pressure from empty to full at 400ml (pressure <10 cm H2O). No detrusor contractions provoked by cough
Detrusor pressure (cm H2O)
50
0
pabd should not rise unless the patient strains or coughs
Rectal pressure (cm H2O)
100
50
0
cough
cough
3 coughs
Flow rate (ml/s)
50
40
30
20
10
0
Qmax rate is usually >15ml/min in women
Time
Events
Start fill
Cough
Fist desire to void (150-250 ml)
Bladder capacity (100-600 ml)
Stand filling line removed
Three coughts
Instructed to void
Interupt flow on command
Recommence flow
Detrusor activity
Minimal pressure rise throughout fill
No leakage
Bladder contracts
Contraction inhibited
Bladder empties completely
No leakage on coughing
NORMAL PATTERN



• Detrusor overactivity

Is a ***urodynamic observation*** characterised, during the ***filling phase***, by ***involuntary detrusor contractions*** which may be spontaneous or provoked in which the detrusor pressure raises and then falls possibly accompanied by a sensation of ***urgency*** (amplitudes less than 5cm H_2O are not meaningful).

• Detrusor overactivity incontinence

is incontinence due to an ***involuntary detrusor contraction.*** In a patient with normal sensation, ***urgency*** is likely to be ***experienced*** just before the leakage episode.

Lifestyle Intervention – Fluid Intake

- Many OAB sufferers restrict fluid intake even before presentation
- No epidemiological relationship between total fluid intake and urge incontinence

  Wyman et al, 1991
- Excessive fluid intake increases frequency and urgency
- Risk of UTI and worsening constipation with fluid restriction

Lifestyle Intervention-Caffeine

- High caffeine intake is an independent risk factor for detrusor overactivity

  Arya, Myers et al, 2000

- Tea drinking (but not coffee) epidemiologically associated with all forms of incontinence

  Hannested et al, 2003 (EPINCONT)

- Caffeine intake pre-urodynamics associated with an increase in cystometric filling pressures

  Creighton, Stanton et al, 1990

4th ICI – Weight Reduction

- Obesity is an independent risk factor for urinary incontinence
- Level 2 evidence that weight loss decreases incontinence in morbidly obese women
- Level 1 evidence that weight loss also effective for moderately obese women

Weight Reduction

- 5-10% weight loss effective for both stress incontinence and OAB for women with moderate obesity

  Subak, Johnson et al, 2002

- Significant improvements both in pad weights and KHQ scores with 10% weight loss

  Auwad, Bombieri and Freeman, 2005

Bladder Drill

- Exclude pathology
- Set target time
- Patient cannot use the toilet until target time reached
- When goal met, increase time
- Normal fluid intake
- Fluid balance chart

Pelvic floor exercises for OAB

- Many RCTs assess pelvic floor exercises in stress incontinence
- No RCTs specifically address urge incontinence
- Improvements seen in most trials for subgroups of women with mixed incontinence
- No evidence of harm
- The 4th International Consultation on Incontinence concluded that pelvic floor exercises should be offered as a first line therapy in all patients with mixed or urge incontinence

Conservative Therapy – Conclusions

- Bladder retraining should be considered in all patients with OAB
- Weight loss may be effective in overweight and obese women
- Pelvic floor exercises are probably of benefit, at least for mixed incontinence
- Other therapies have high relapse rates, and may have a significant placebo component

Antimuscarinic Agents

After lifestyle changes, antimuscarinic agents are the most common and currently the most widely used therapy for OAB syndrome.

Andersson, 2004

Antimuscarinics

- reduce intra-vesical pressure
- increase compliance
- raise volume threshold for micturition
- reduce uninhibited contractions

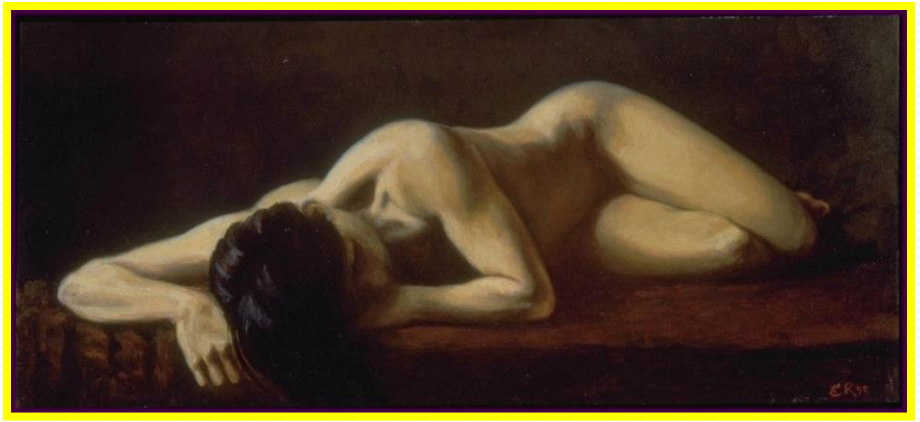
Abrams et al, 2002

4th International Consultation on Incontinence

Drug	Level of evidence	Grade of recommendation
Darifenacin	1	A
Oxybutynin	1	A
Propiverine	1	A
Solifenacin	1	A
Tolterodine	1	A
Trospium	1	A
Fesoterodine	1	A

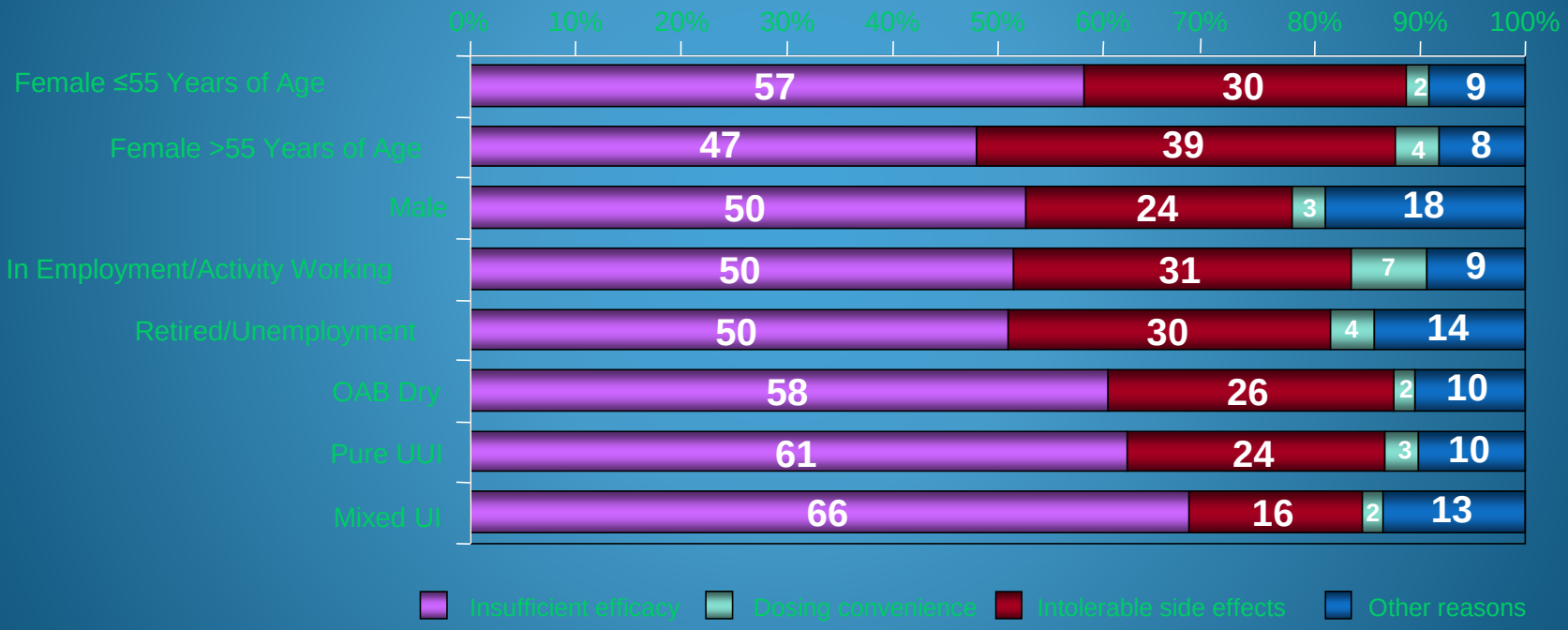
Antimuscarinic Side Effects

- Dry mouth
- Constipation
- Blurred vision
- Somnolence



Why Do Patients Stop Taking Antimuscarinic Therapy?

Lack of efficacy is the major reason for failure of first-line antimuscarinic therapy:



SURGERY

- THERE ARE MORE THAN 100 OPERATIONS DESCRIBED FOR USI.

- THE MECHANISM OF CURE IN NOT WELL KNOWN.

Objective surgical cure rates for GSI

Procedure	Objective
MMK	443 (69%)
Colposuspension	2300(84%)
Needle	729 (70%)
Sling	720 (85%)
Kelly type	490 (42%)
Injectables	133 (60%)
TOTAL	4815

Jarvis 1994 Meta-analysis

Burch Colposuspension
Laparascopic vs. Open

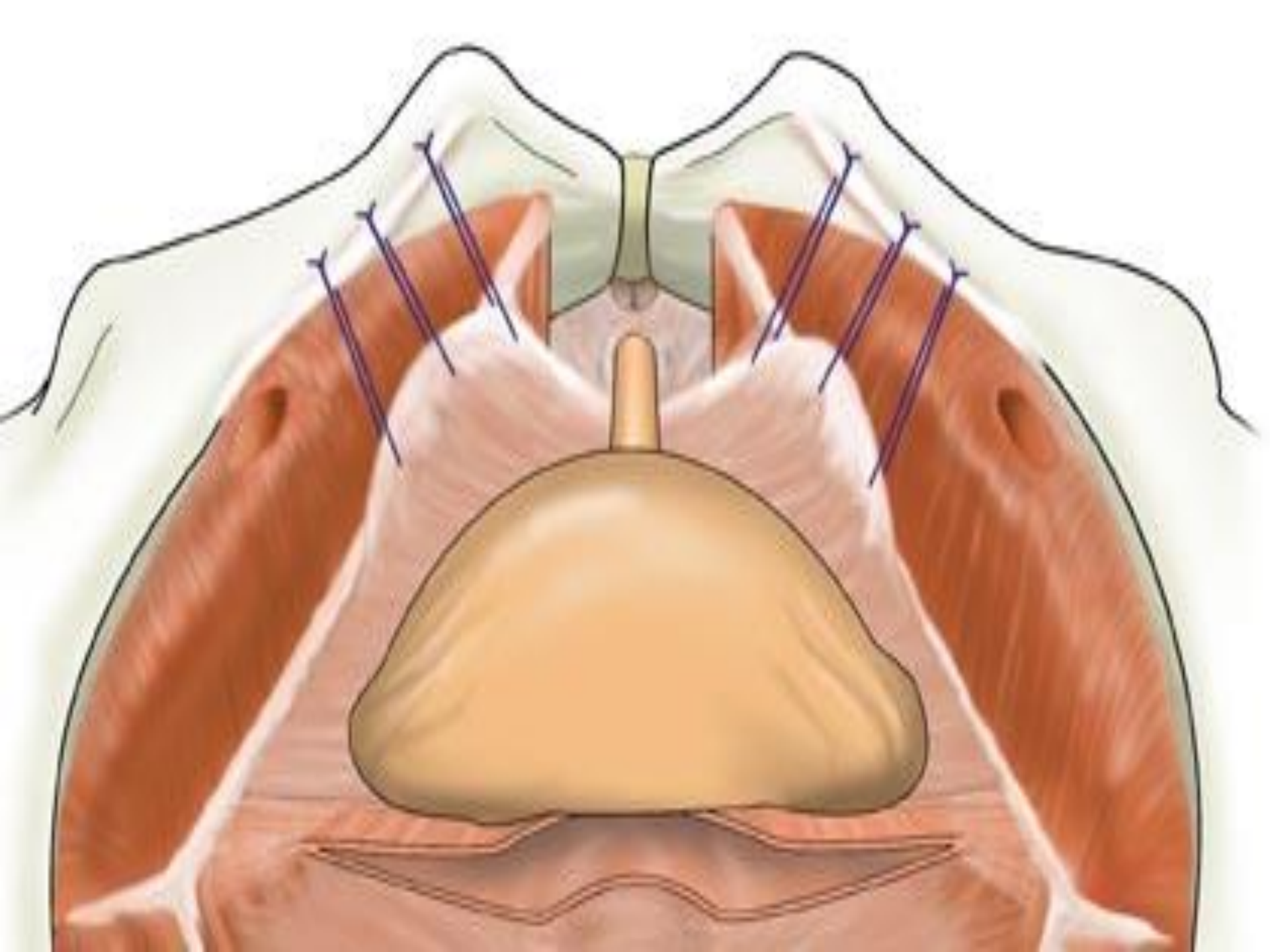
The Cochrane Review - Ellis et al. 2008/ 1

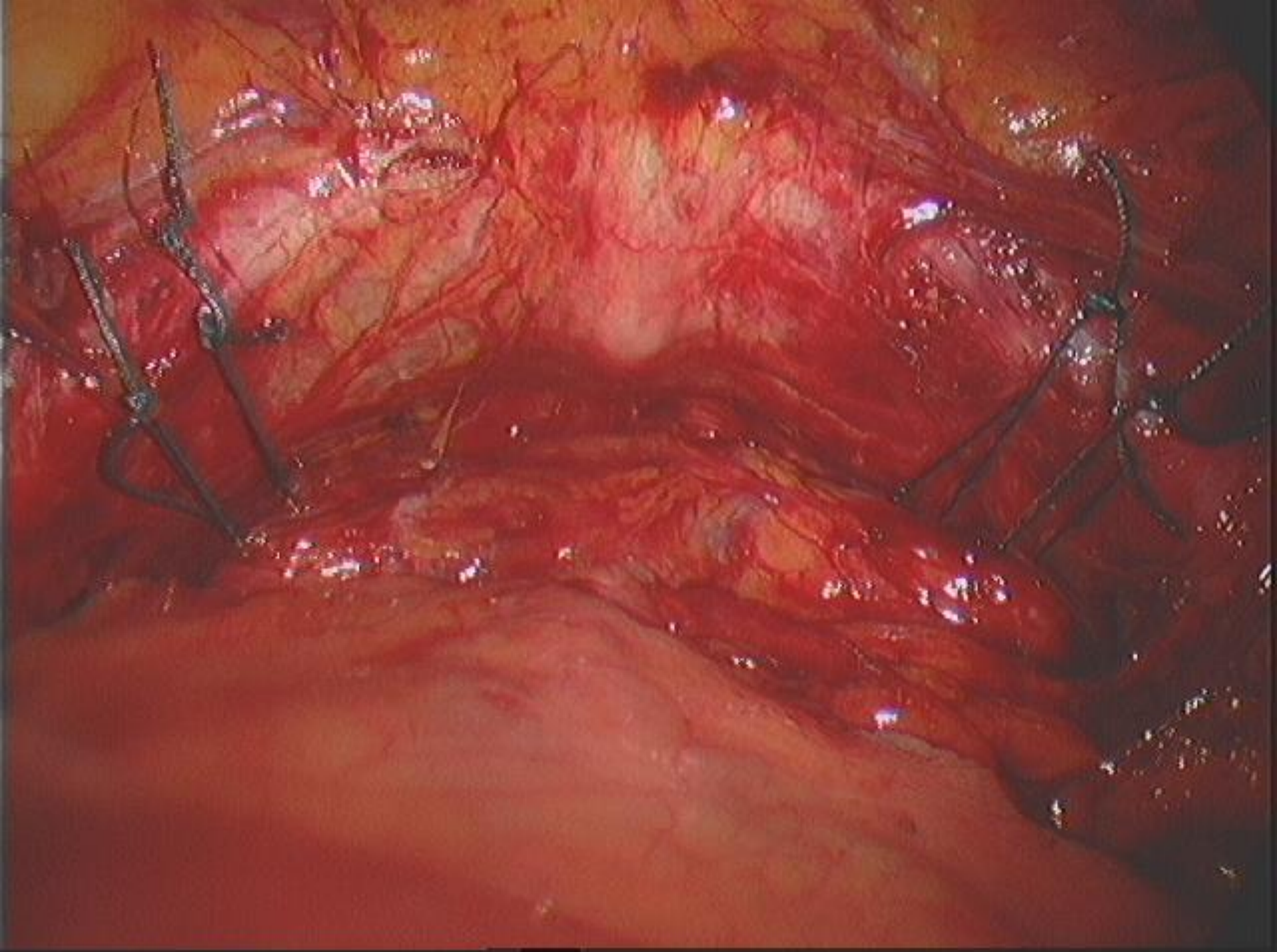
- Outcome equally good
- No significant difference for postop. urgency, voiding dysfunction or

  de novo DO

Is there still a place for Burch colposuspension in 2010 ?

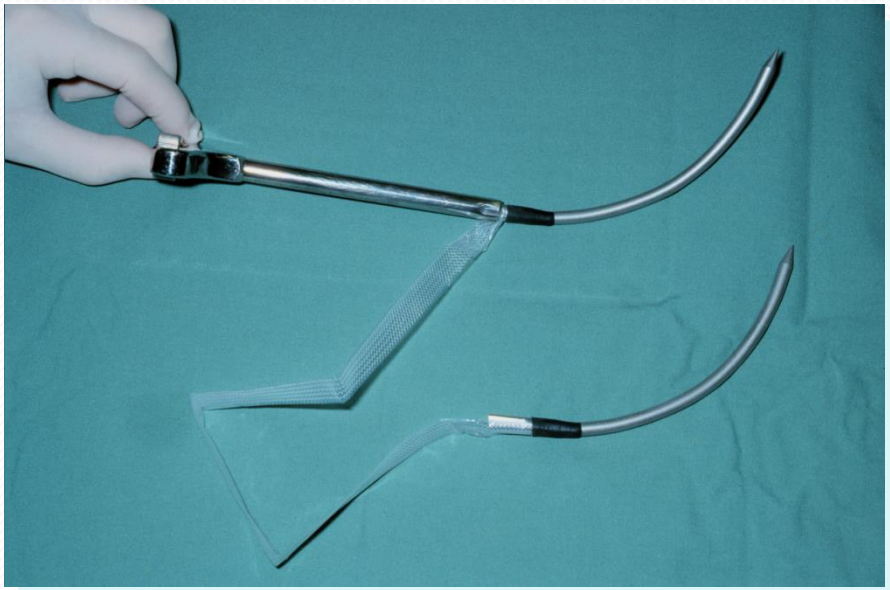
- SUI, when laparotomy necessitated by other pathology
- ??? Not justified to do laparotomy for SUI

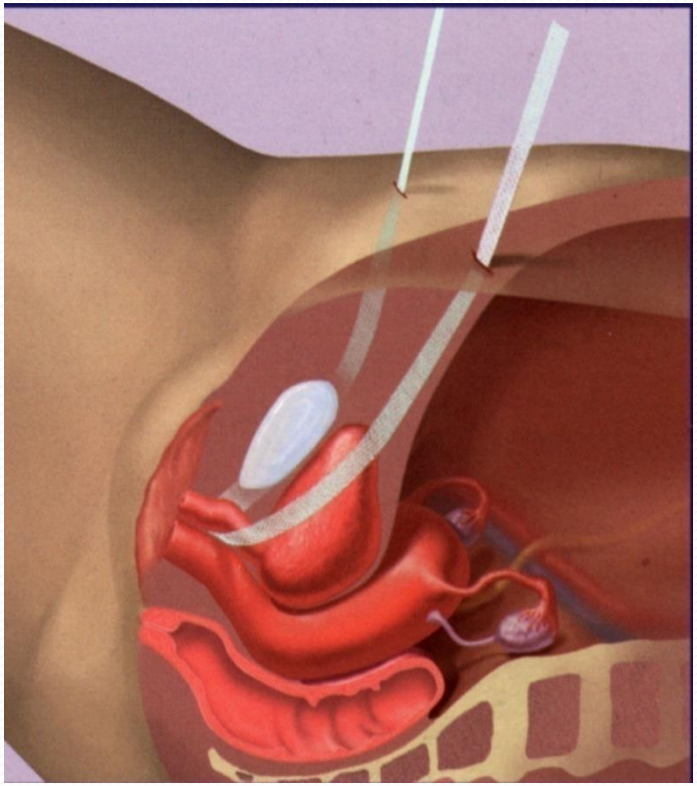




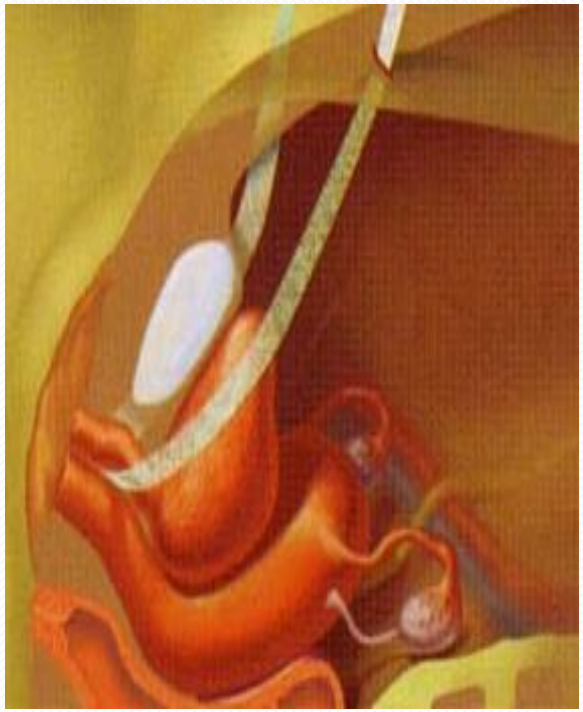
Tension Free Vaginal Tapes

Ulmsten & Petros 1995





Tension-free vaginal tape
TVT

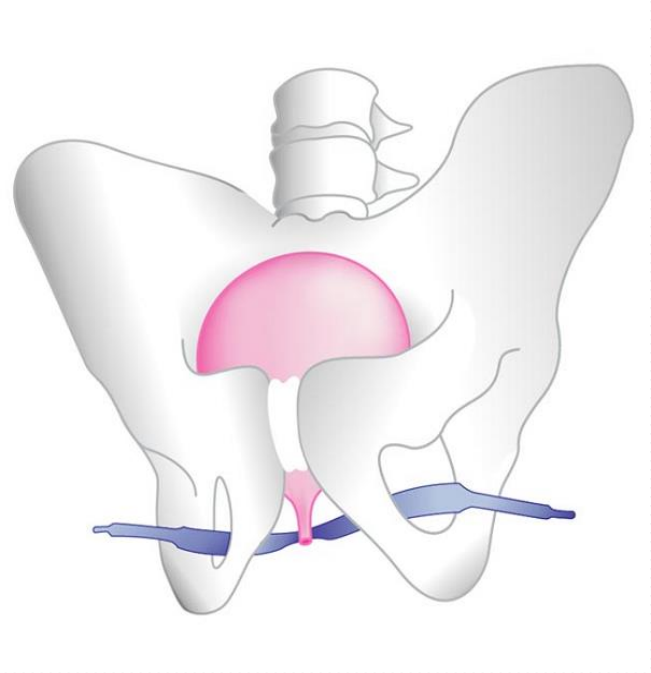


- Cohort analysis demonstrates efficacy rate of 80% cure and 94% improvement (Level 2)
- RCTs suggests equal success rates to colposuspension
  (Level 1/2)
- Reduced surgical morbidity
  (Level 1/2)

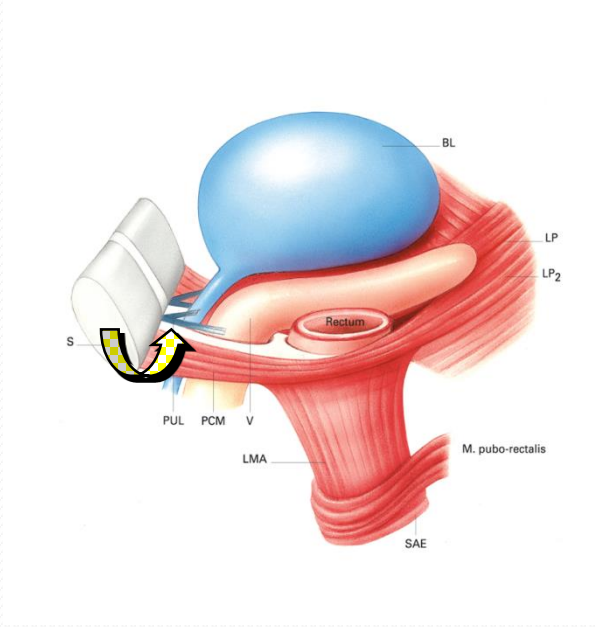
ICI 2004

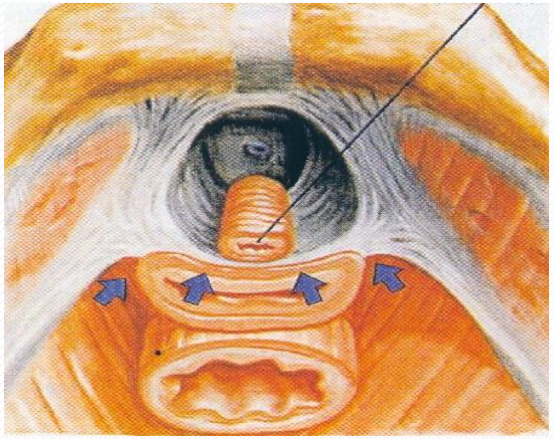
Transobturator suburethral tape (TOT)

Delorme 2001



- Tape runs through both obturator foramina
- Cystoscopy not necessary (bladder perforation unlikely)



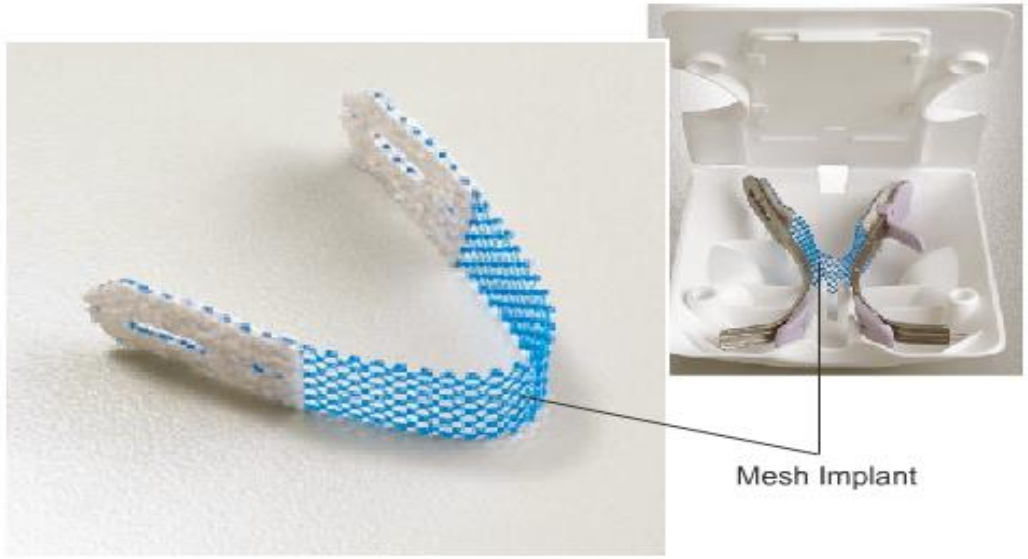


TOT – MODE OF ACTION

- Support of the mid portion of the urethra forming a sort of hammock
- Forces against this hammock determine urethral compression
- This mechanism prevent stress urinary incontinence

Single Incision Slings

1st GYNECARE TVT SECUR System
then many other launched on the market
(AMS, Bard, Neomedics etc)



SINGLE INCISION SLINGS

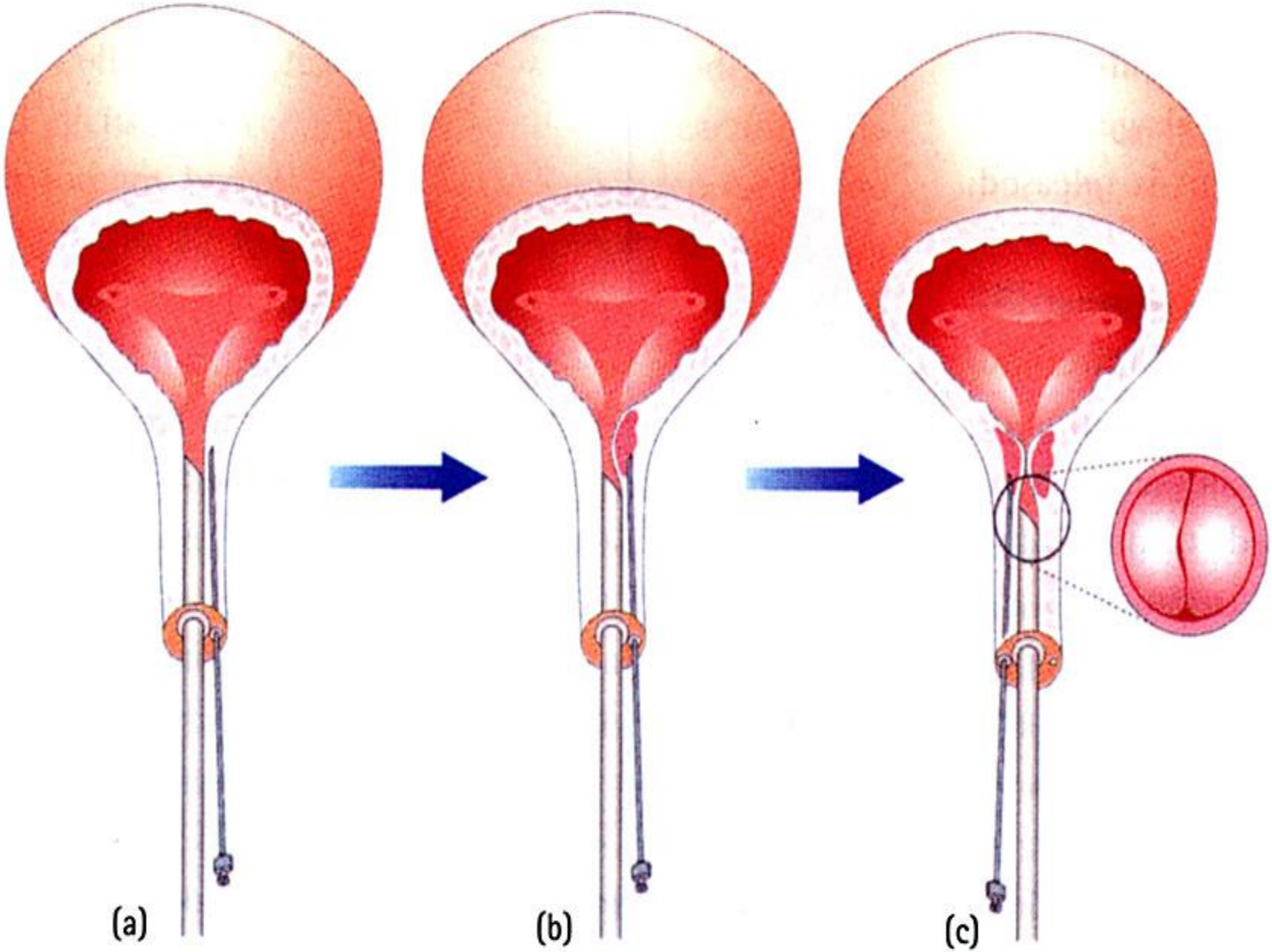
- Still lack of evidence based data
- To be used in clinical trials

URETHRAL BULKING AGENTS

- Rather expensive with transient cure rate

  - 50% after 2yrs

- Problems: acute retention (2%), bovine collagen allergy, urgency (13%)


(a)
(b)
(c)

HOW DO WE AVOID INJURIES / COMPLICATIONS?

1. Know the anatomy well
2. Good training: Observe / Assist
   Perform 10-15 under supervision
   Independent practice with review
   Cystoscopy
3. Do procedures regularly: skills retention
4. Follow rules: Cystoscopy
   Tape tension adjustment
   Position needles carefully
5. Refer difficult cases to Tertiary Centre/ Urogynaecologist

MINIMIZING COMPLICATIONS, MAXIMISING SUCCESS

- Correct indications
- Urodynamic studies
- Competent surgeon
- Well-trained in procedure
- Can manage complications with confidence

THANK YOU