Management of OAB

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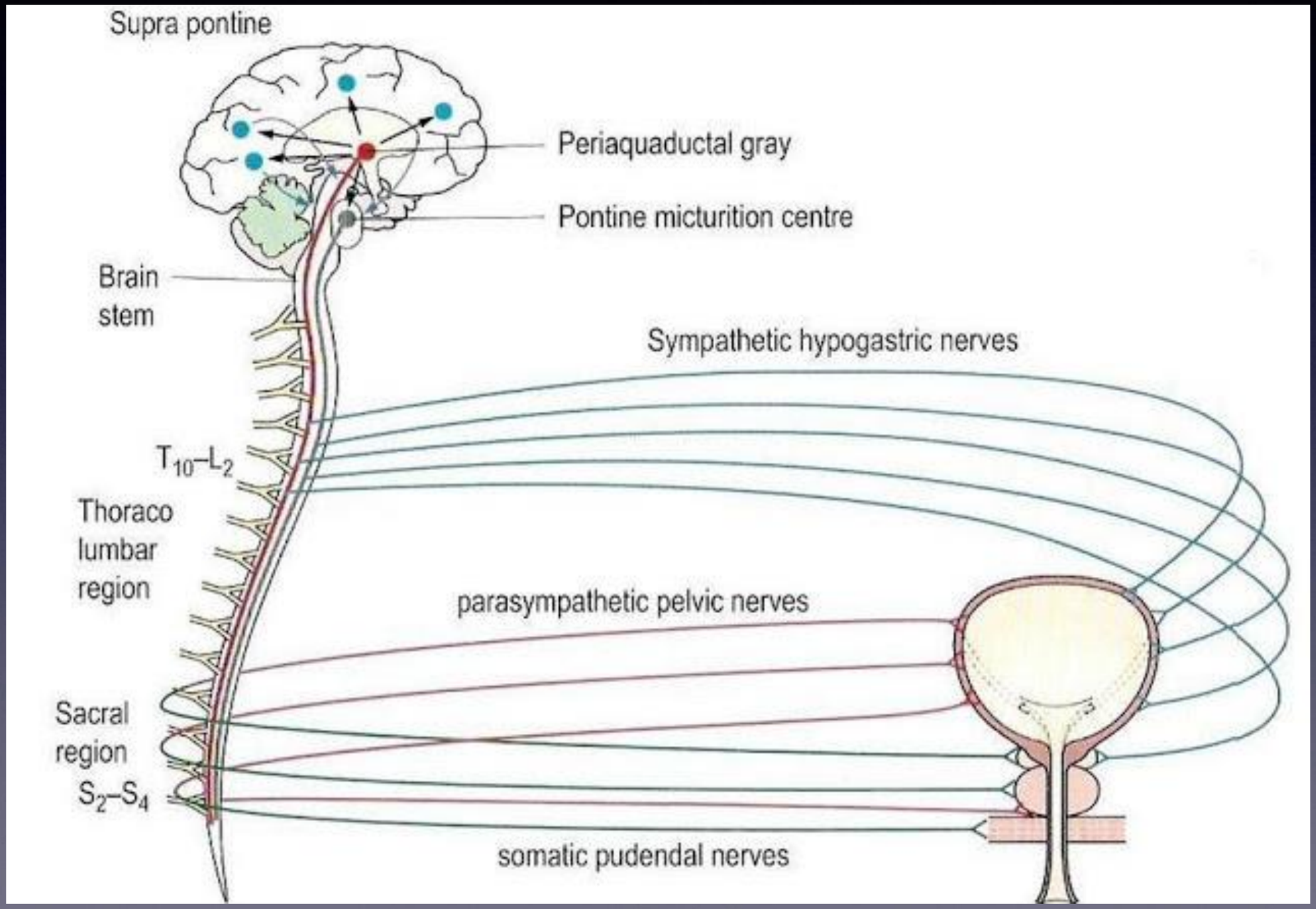
Summary

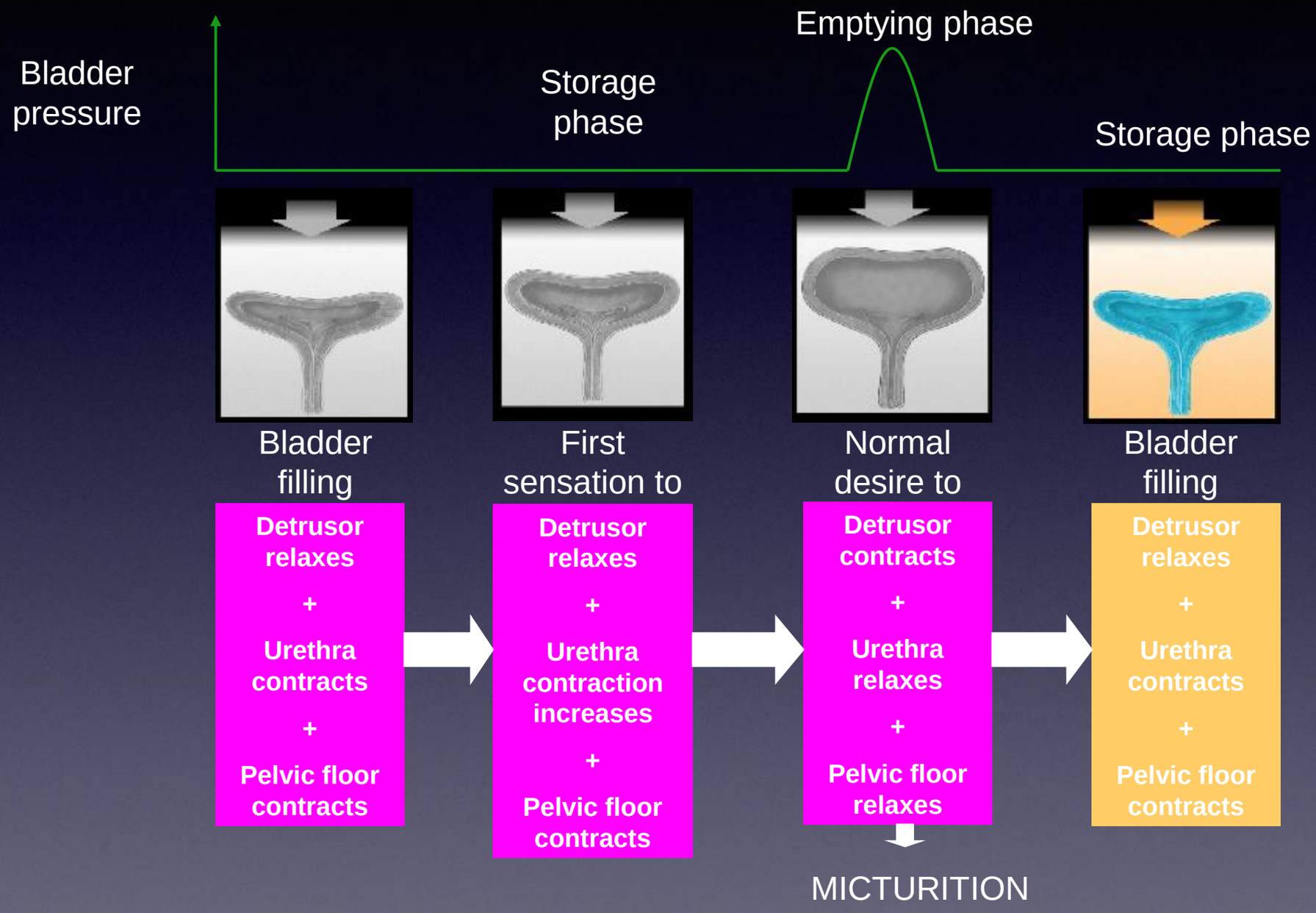
- Physiology
- Epidemiology
- Definitions
- NICE guidelines
- Evaluation
- Conservative management
- Medical management
- Surgical management

Physiology

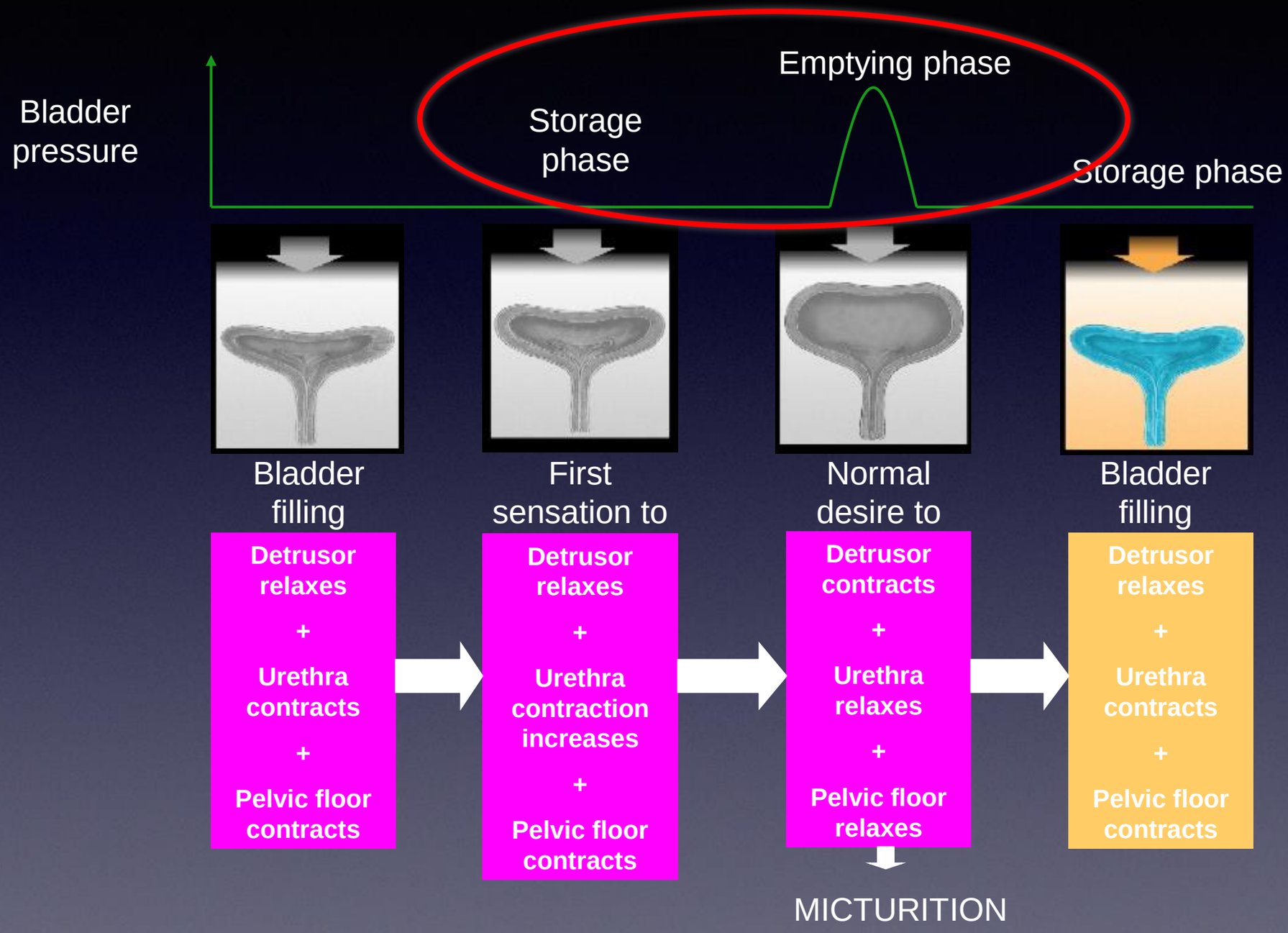
Control of micturition



Normal Micturition Cycle



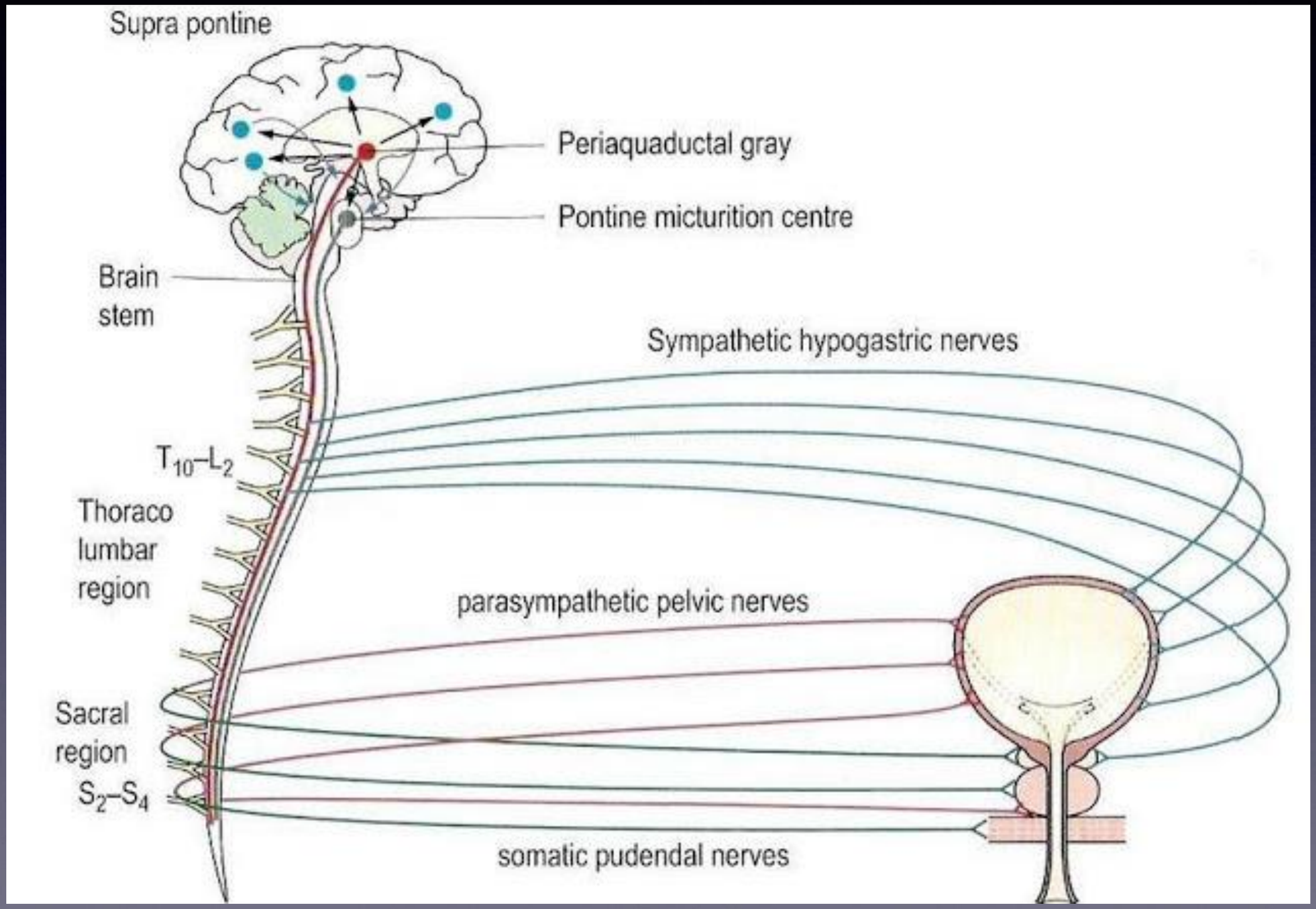
Normal Micturition Cycle



Causes of OAB

- Idiopathic
- Neurogenic: eg
    - MS
    - Spinal cord injury
    - CVA
    - Parkinsons
    - Diabetes etc

Control of micturition

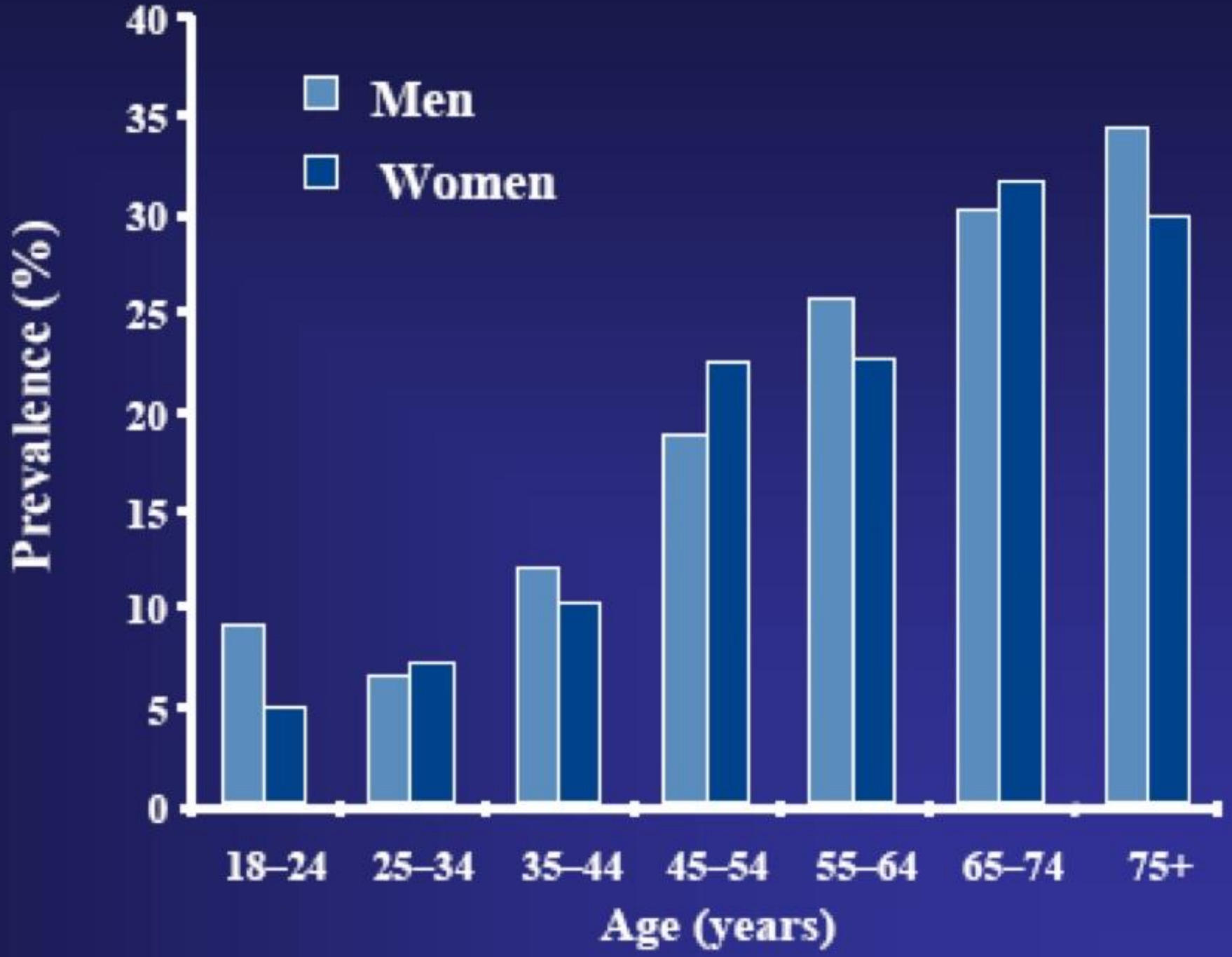


Epidemiology

- Urinary incontinence as a worldwide problem
  - Minassian et al, Int J Gyn Obs, 2003
    - Prevalence of women with urinary incontinence 28%
      - Increases with age
      - Stress 50%
      - Mixed 32%
      - **Urge 14%**

Prevalence of Total OAB Increases with Age (US Data)

- Prevalence is similar for men and women
- Other risk factors include: neurological disease, bladder outlet obstruction and stress incontinence



Adapted from Stewart W et al. *World J Urol* 2003;20:327-336

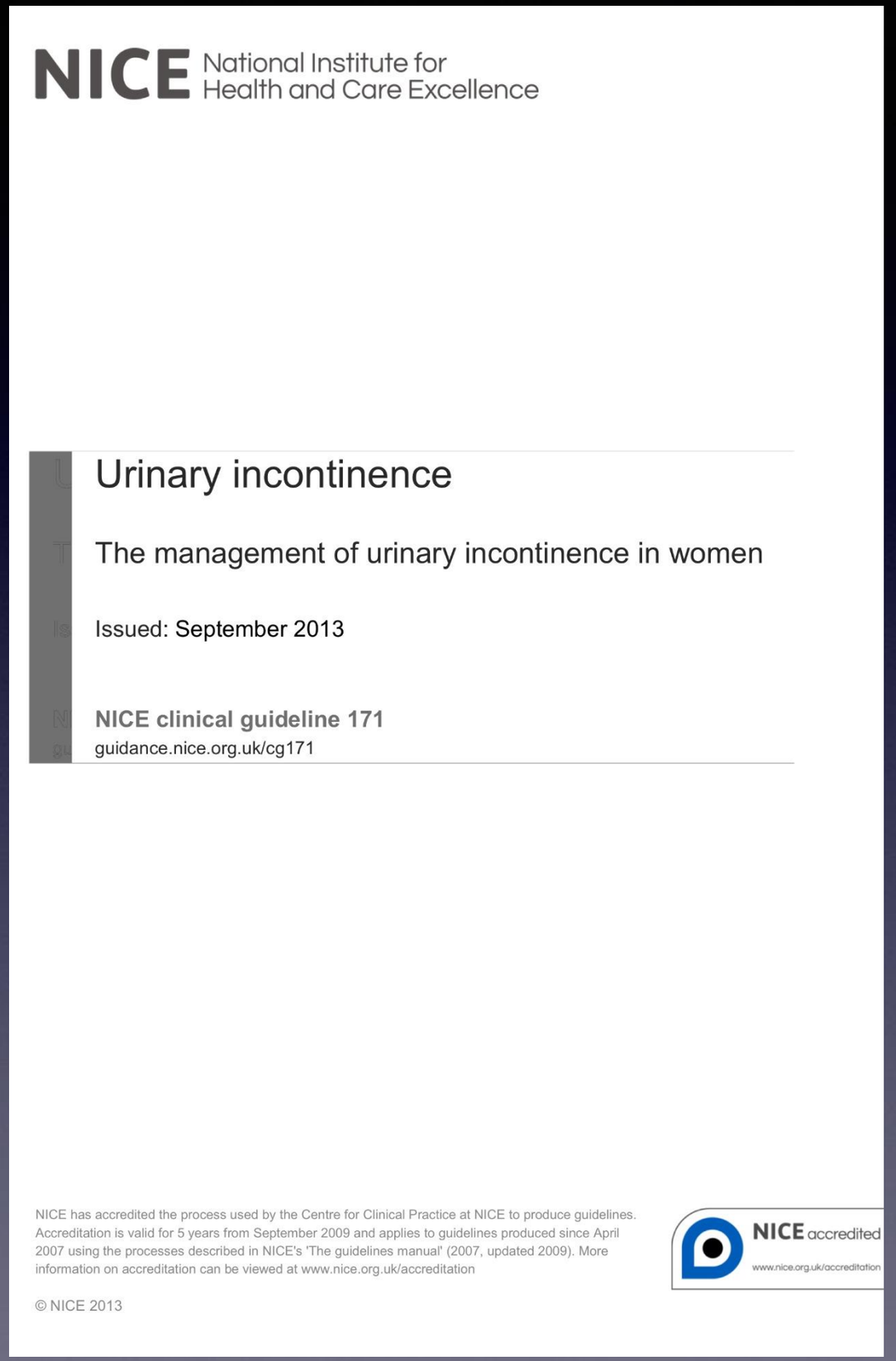
Definitions

- ICS definitions:
- Urinary incontinence (UI) - 'the complaint of any involuntary leakage of urine'
- Urgency - 'a sudden compelling desire to urinate that is difficult to delay'
- Urgency UI - 'involuntary urine leakage accompanied or immediately preceded by urgency'
- Overactive bladder (OAB) - 'urgency that occurs with or without urgency UI and usually with frequency and nocturia'
- OAB dry vs OAB wet

NICE guidelines

Definitely a 'guide'

Important to understand limitations!



NICE National Institute for Health and Care Excellence

Urinary incontinence

The management of urinary incontinence in women

Issued: September 2013

NICE clinical guideline 171
guidance.nice.org.uk/cg171

NICE has accredited the process used by the Centre for Clinical Practice at NICE to produce guidelines. Accreditation is valid for 5 years from September 2009 and applies to guidelines produced since April 2007 using the processes described in NICE's 'The guidelines manual' (2007, updated 2009). More information on accreditation can be viewed at www.nice.org.uk/accreditation

NICE accredited
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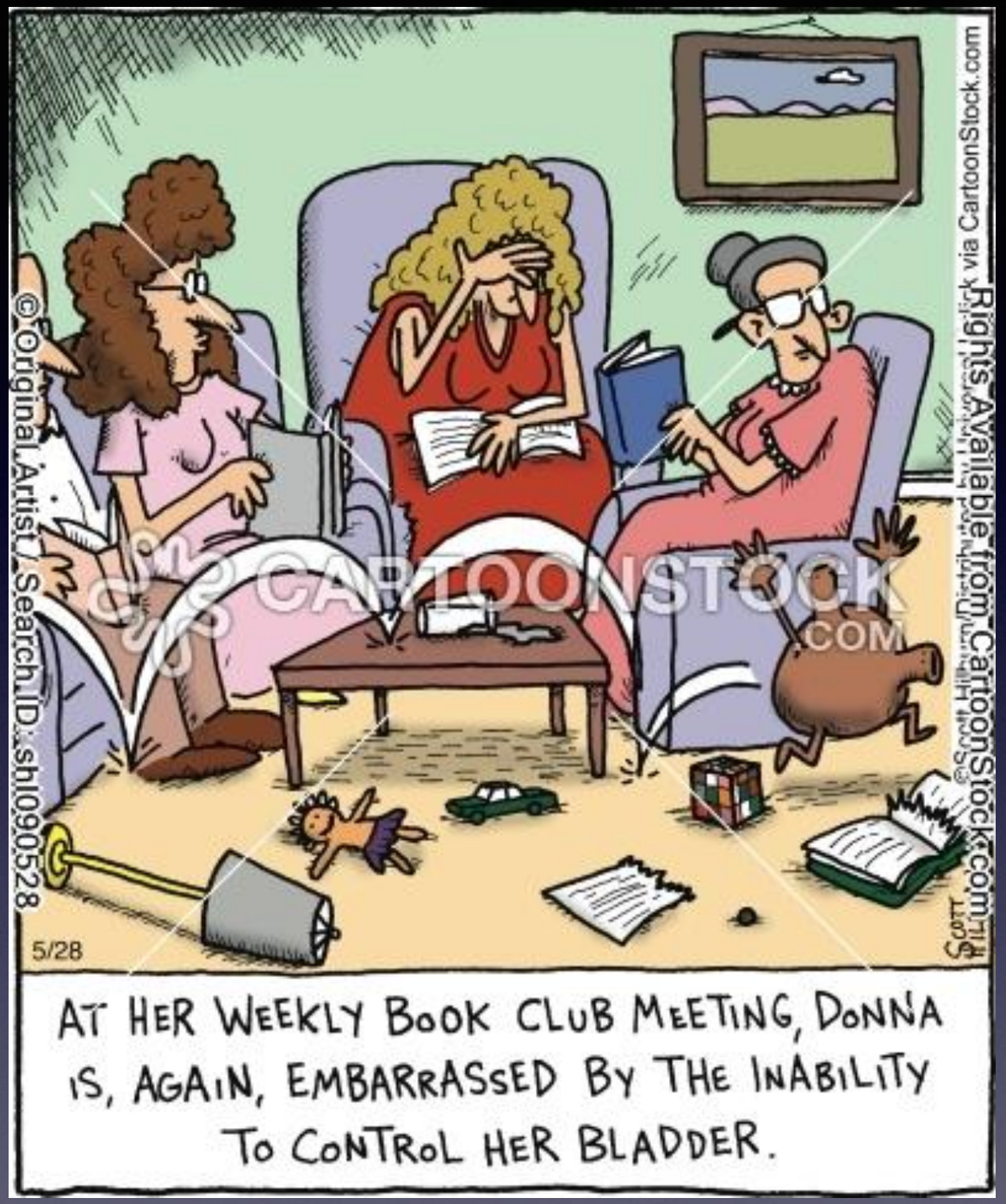
©Original Artist. Search ID: shl090528
5/28
AT HER WEEKLY BOOK CLUB MEETING, DONNA IS, AGAIN, EMBARRASSED BY THE INABILITY TO CONTROL HER BLADDER.
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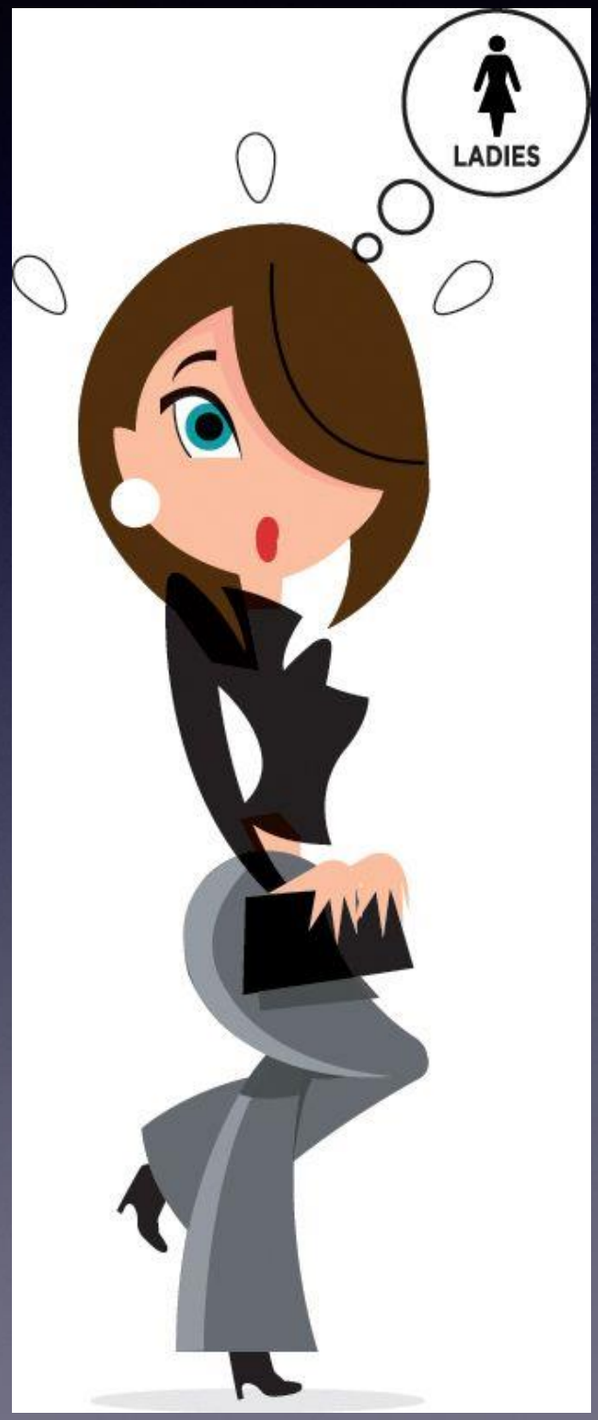
Evaluation

Clinical assessment

- HISTORY
- What is the predominant symptom?
  - Categorise as stress UI, mixed UI, or OAB
- Predisposing/precipitating factors
  - Fluids!



Clinical assessment

- General patient assessment
    - How far will you go with treatment?
- Urine dip
- Bladder scan
- BLADDER DIARY
    - minimum 3 days

Investigations

CYSTOSCOPY?

- Haematuria
- Pain
- New onset in older patients
- Recurrent UTI’s

Investigations

URODYNAMICS

- **Do not** perform before starting conservative management

- Perform **before surgery** in women who have symptoms of OAB leading to a clinical suspicion of destructor overactivity

- Consider ambulatory urodynamics if the diagnosis is unclear after conventional urodynamics

Conservative Management

Lifestyle interventions

- Trial of caffeine reduction
- Modification of high or low fluid intake
- Weight loss if BMI >30

Behavioural therapies

- Bladder retraining
  - For at least 6 weeks as first line treatment
  - ?compliance
  - Important in combination with OAB drugs

Alternative conservative options

- Pads, conveen etc
- Catheterisation
    - Urethral, SPC
    - CISC

Medical management

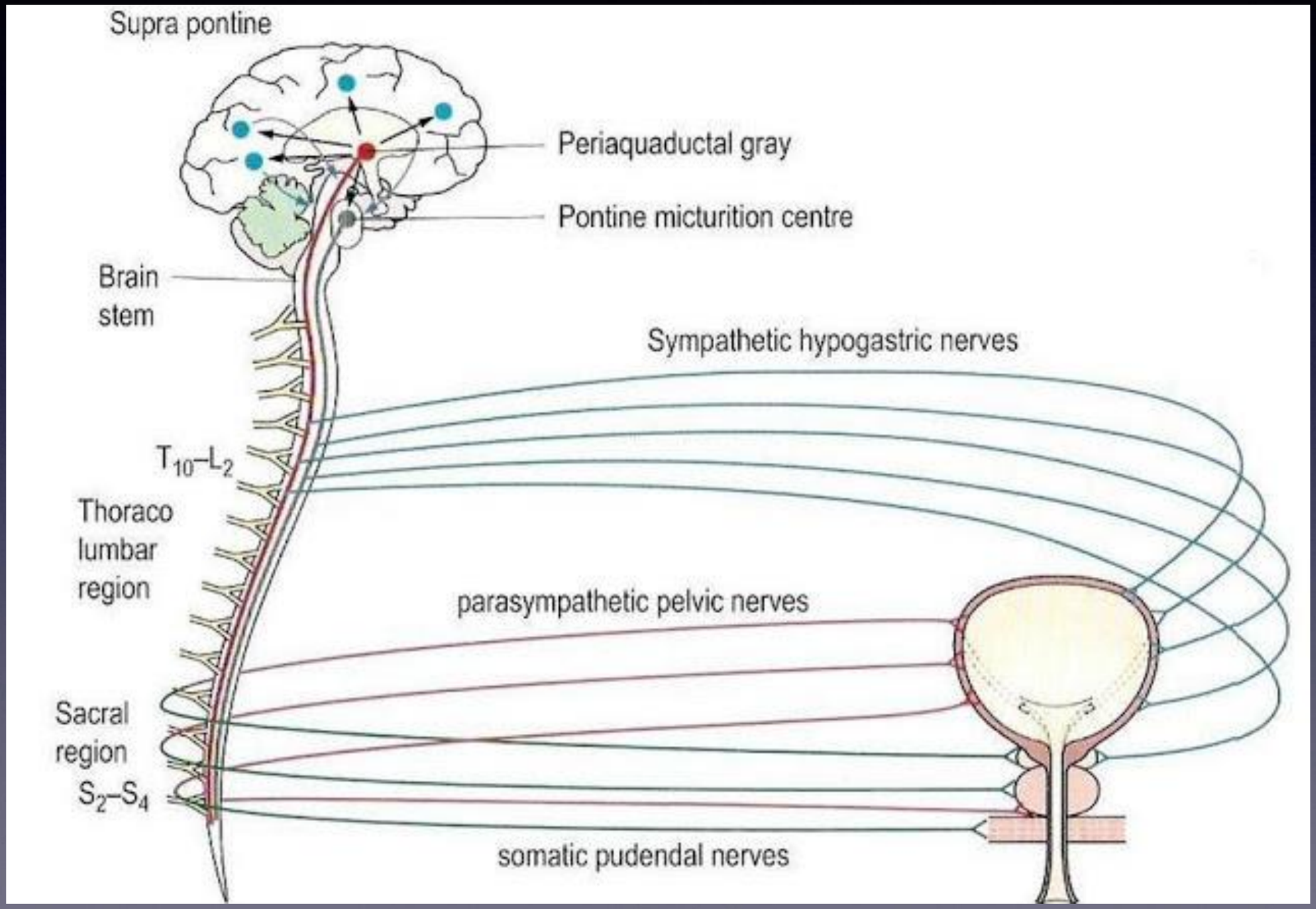
Medical management

- Antimuscarinics
    - First line
- Beta-3-adrenoreceptor agonists
    - For those in whom antimuscarinic drugs are contraindicated, clinically ineffective, or have unacceptable side effects

Antimuscarinics

- Inhibit muscarinic receptors in the bladder
  - Parasympathetic pathways
- Decrease involuntary detrusor contractions and increase bladder capacity

Control of micturition



Antimuscarinics: Side effects & cautions

- Side effects
  - Dry mouth, constipation, raised intra-ocular pressure, tachycardia, confusion
- Contraindications
  - Myasthenia gravis, significant BOO, severe ulcerative colitis, toxic megacolon, GI obstruction, intestinal agony, 'very rarely may precipitate acute angle-closure glaucoma'

Antimuscarinics: Compliance with therapy

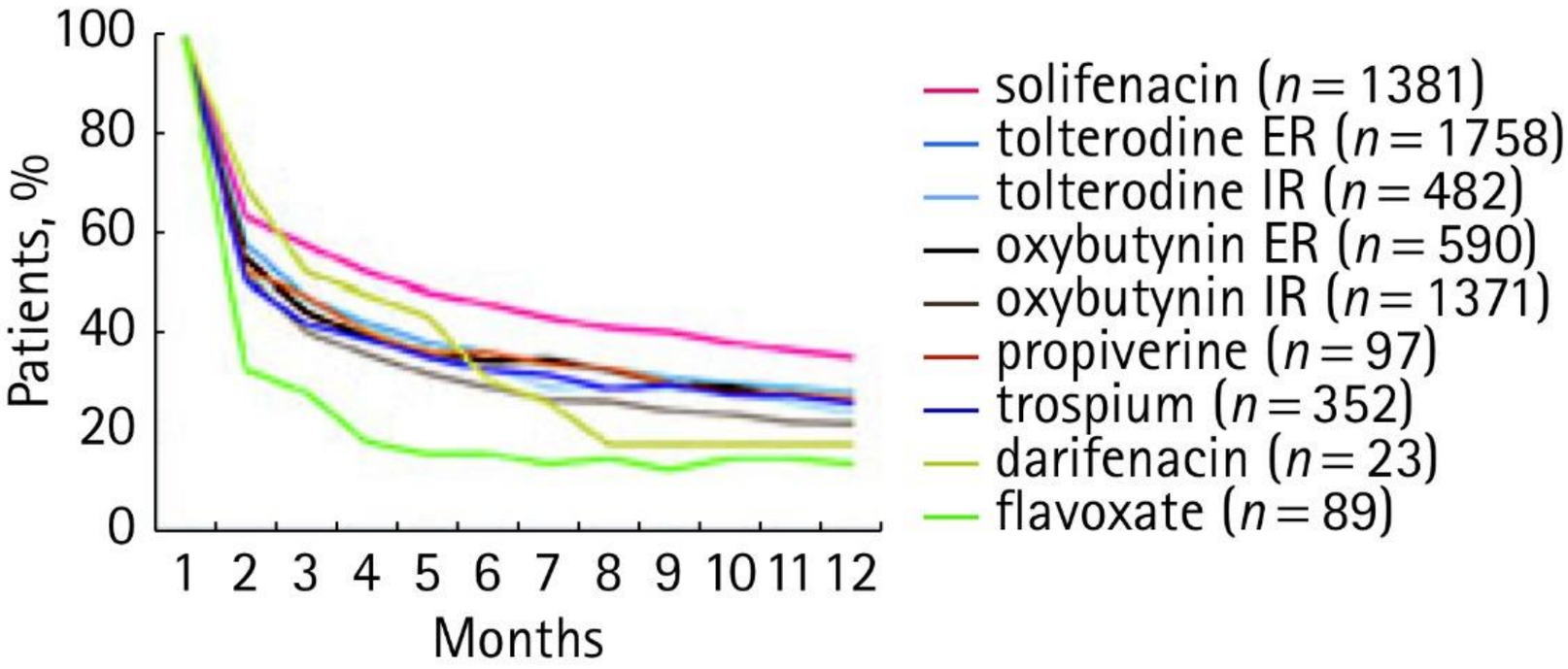


FIG. 2.

Percentage of patients remaining on each antimuscarinic over 12 months. Data are for combined doses for each antimuscarinic. Numbers are for patients starting treatment.

Persistence with prescribed antimuscarinic therapy for overactive bladder: a UK experience

Wagg et al, BJUI, 2012

Antimuscarinics: Which one???

- NICE:
- Offer one of the following choices first to women with OAB or mixed UI:
    - oxybutynin (immediate release), or
    - tolterodine (immediate release), or
    - Darifenacin (once daily preparation)
- If the first treatment for OAB or mixed UI is not effective or well tolerated, offer another drug with the lowest acquisition cost.
- Offer a transdermal OAB drug to women unable to tolerate oral medication
- BASED ON COST!

Antimuscarinics: Cost

Drug	Dose	Frequency	Cost for 4/52
Oxybutynin IR	5mg	tds	£4.71
Tolterodine IR	2mg	od	£4.36
Darifenacin	7.5mg	od	£20.90
Oxybutynin ER	10mg	od	£25.70
Tolterodine ER	4mg	od	£25.78
Solifenacin	5&10mg	od	£29.39
Fesoterodine	4&8mg	od	£25.78
Trospium ER	60mg	od	£23.05
OxybutyninTD	39mg patch	2x weekly	£27.20

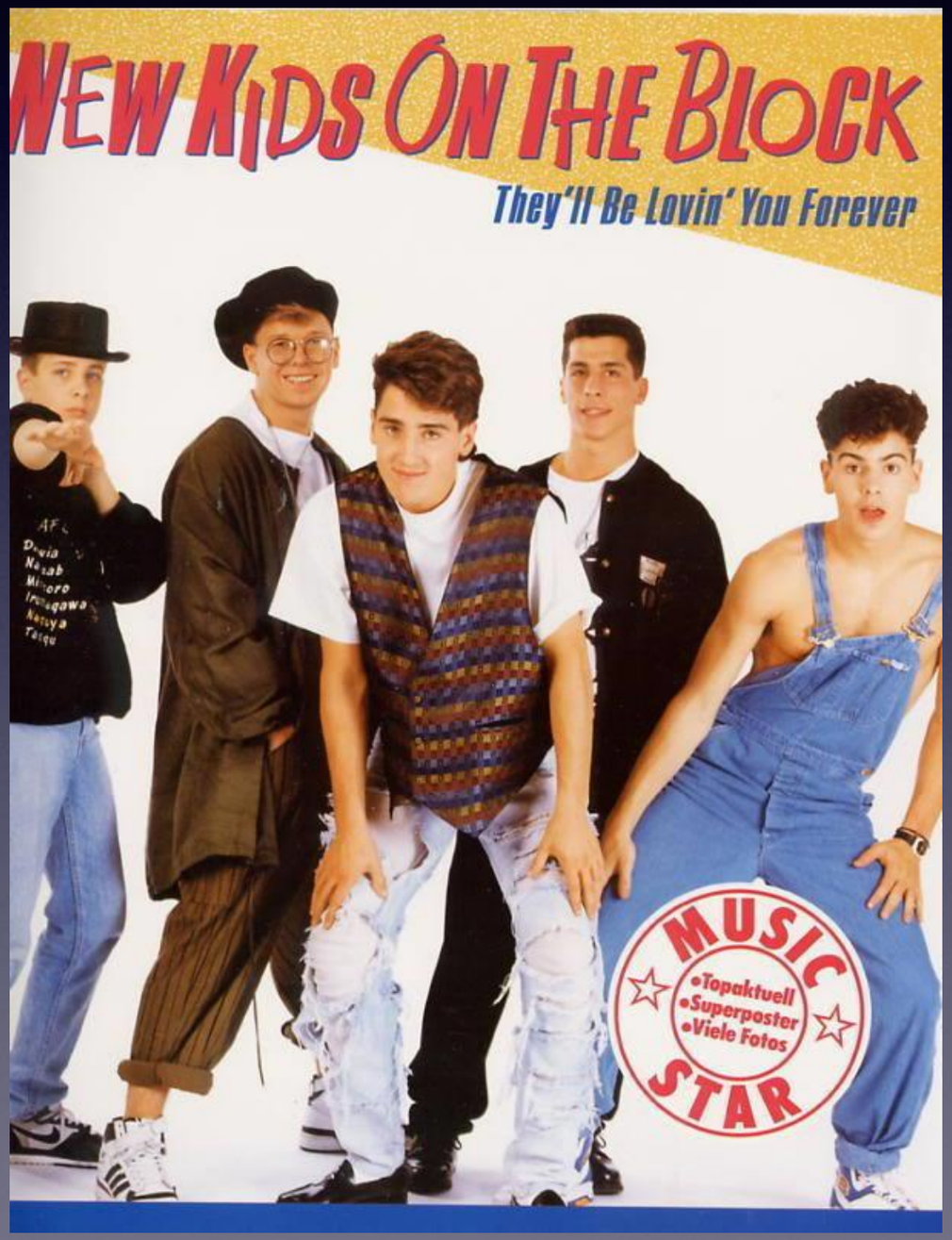
Antimuscarinics: The evidence....?

- Trials tend to be run by drug companies
- None comparing all drugs
- Tend to be RCT's of new drug vs placebo/oxybutynin/tolterodine
- NICE: 'too few studies to draw conclusions about superiority of any drug over another'
    - NB darifenacin: placebo-controlled trials only
- Cochrane review (2012): really unable to confidently recommend best choice due to lack of evidence

Antimuscarinics: Which one?

- In practice comes down to your experience!
- I find tolerability with Oxybutynin and tolterodine IR poor
- I feel too little evidence for darifenacin
- So I use:
  - Trospium ER
  - Solifenacin
  - Fesoterodine
  - Oxybutynin patches
    - Valuable role!

Beta-3-adrenoreceptor agonist: Mirabegron



NICE National Institute for Health and Care Excellence

Mirabegron for treating symptoms of overactive bladder

Issued: June 2013

NICE technology appraisal guidance 290

guidance.nice.org.uk/ta290

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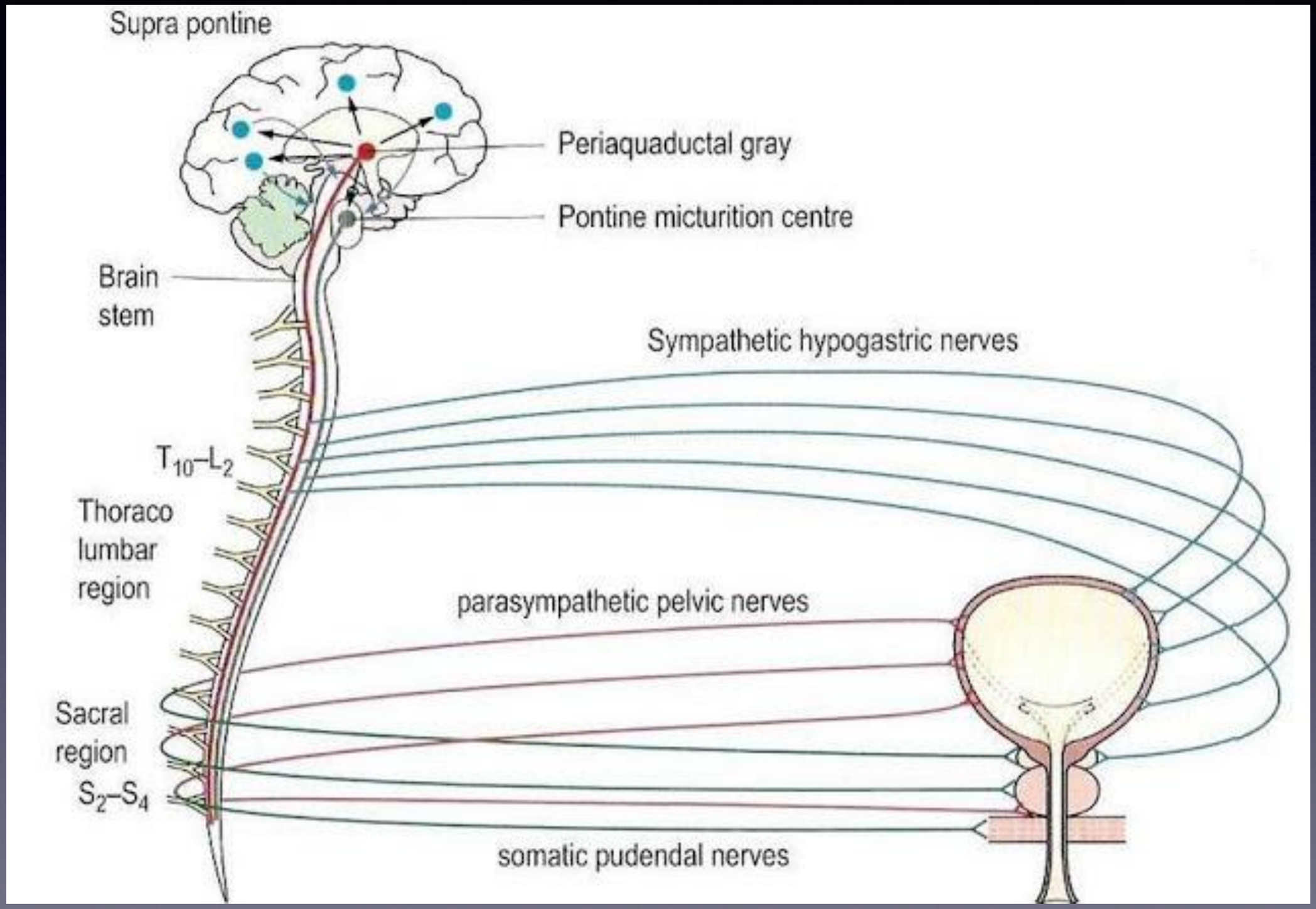


Mirabegron: The facts

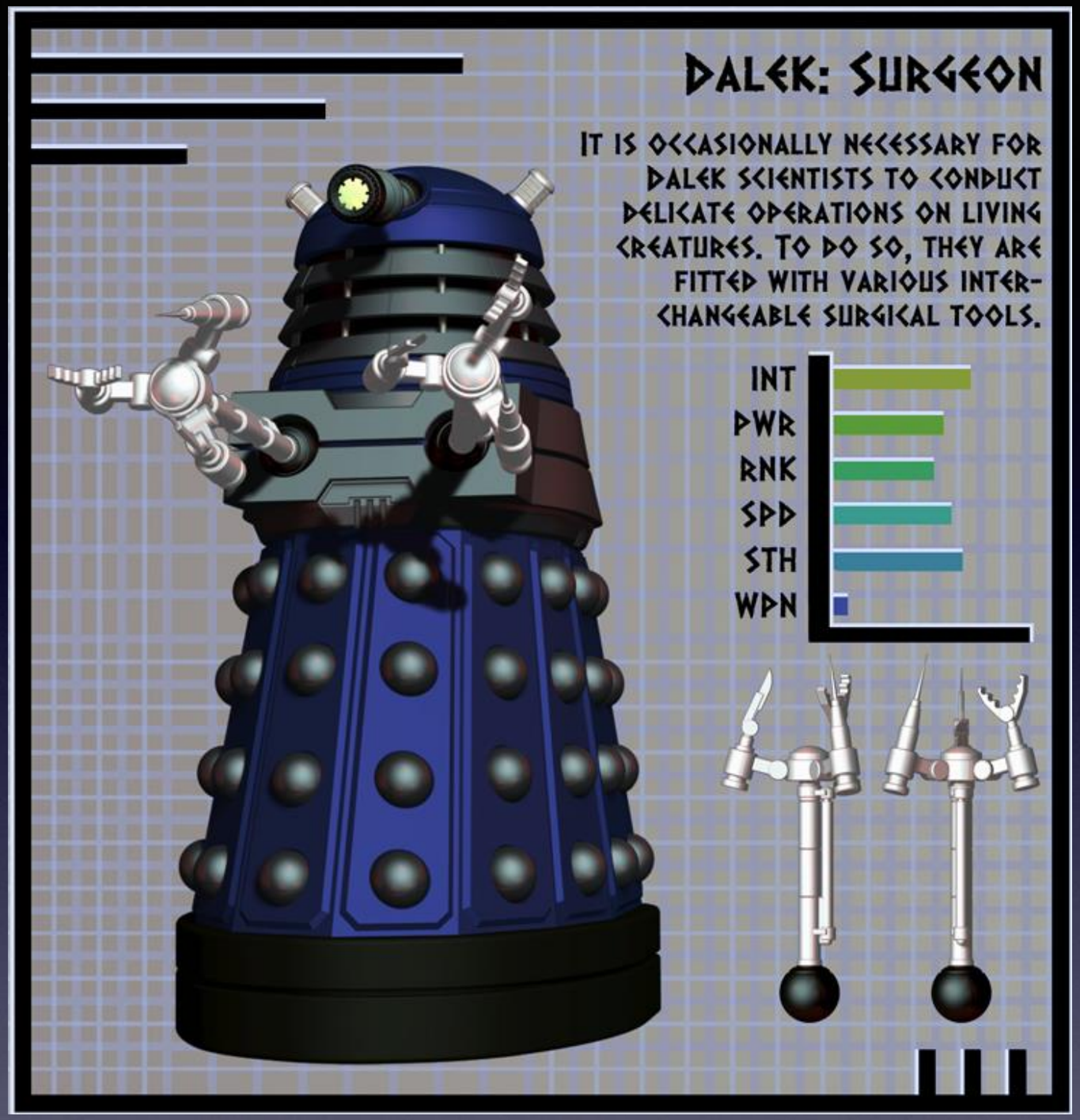
- Mode of action
    - Beta-3 agonist: relaxes detrusor and increases bladder capacity
- Side effects vs antimuscarinics:
    - Reduced dry mouth
    - No evidence that persistence rates will be better
- Efficacy:
    - Limited trials sponsored by drug company
    - NICE: better than placebo, more uncertain whether it has equivalent efficacy to all antimuscarinics
- Cost: 25mg or 50mg od, £27.06 for 28 days

Mirabegron: Warnings & precautions

- Should not be used:
    - End stage renal disease, severe hepatic impairment, severe uncontrolled hypertension
- Caution in milder forms of renal/hepatic impairment - lower dose
- Side effects: urinary tract infection, tachycardia, vaginal infection, cystitis, palpitation, atrial fibrillation, dyspepsia, gastritis, urticaria, rash, rash macular, rash popular, pruritus, joint swelling, vulvovaginal pruritis, increased blood pressure etc

Mirabegron: Current role

- I nearly agree with NICE:
  - For those in whom antimuscarinic drugs are contraindicated, clinically ineffective, or have unacceptable side effects
- I currently try in those who've failed antimuscarinics and can't/won't go for Botox

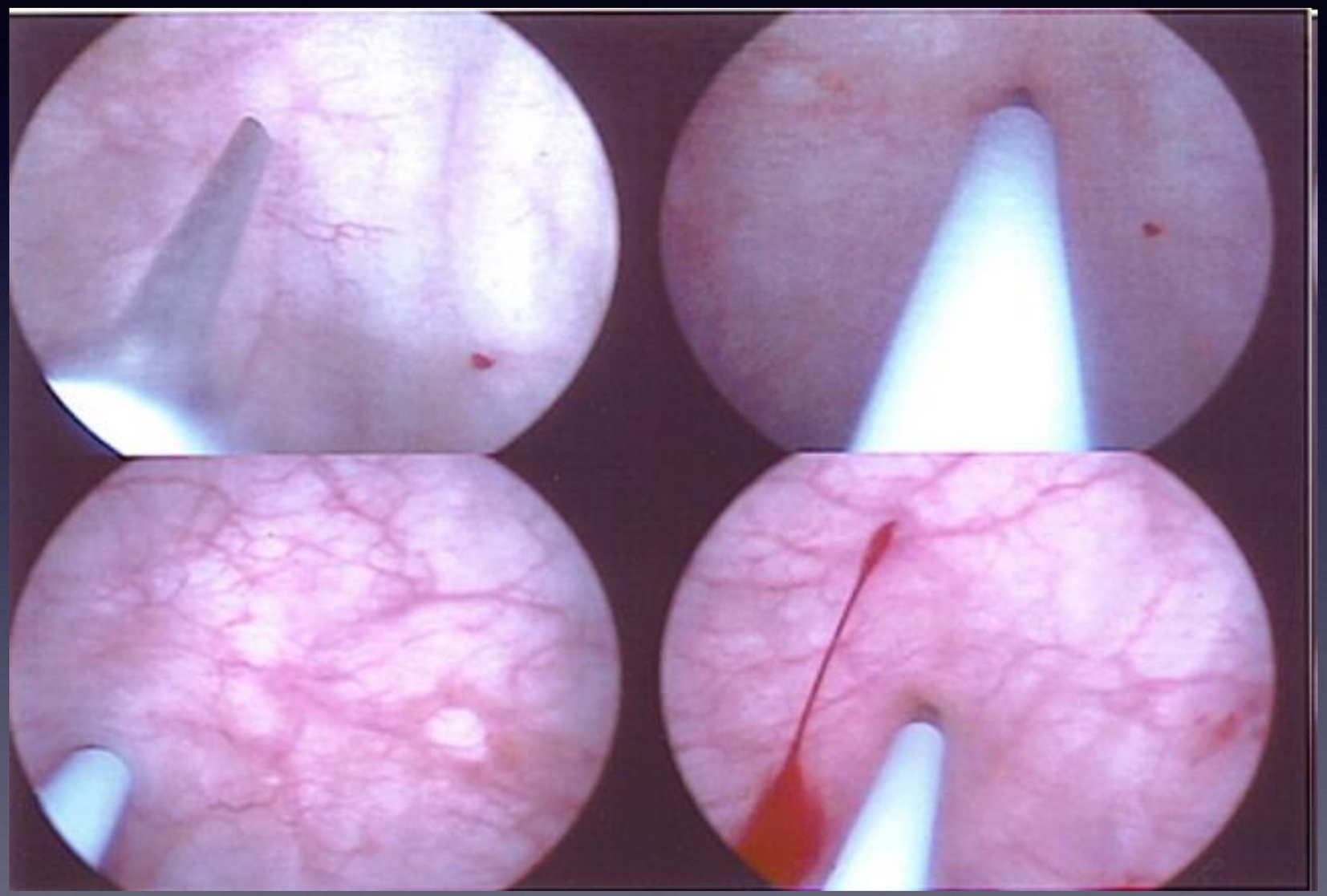


Surgical management

Invasive procedures for OAB

- Botox A
- Percutaneous sacral nerve stimulation
- Augmentation cystoplasty
- Urinary diversion

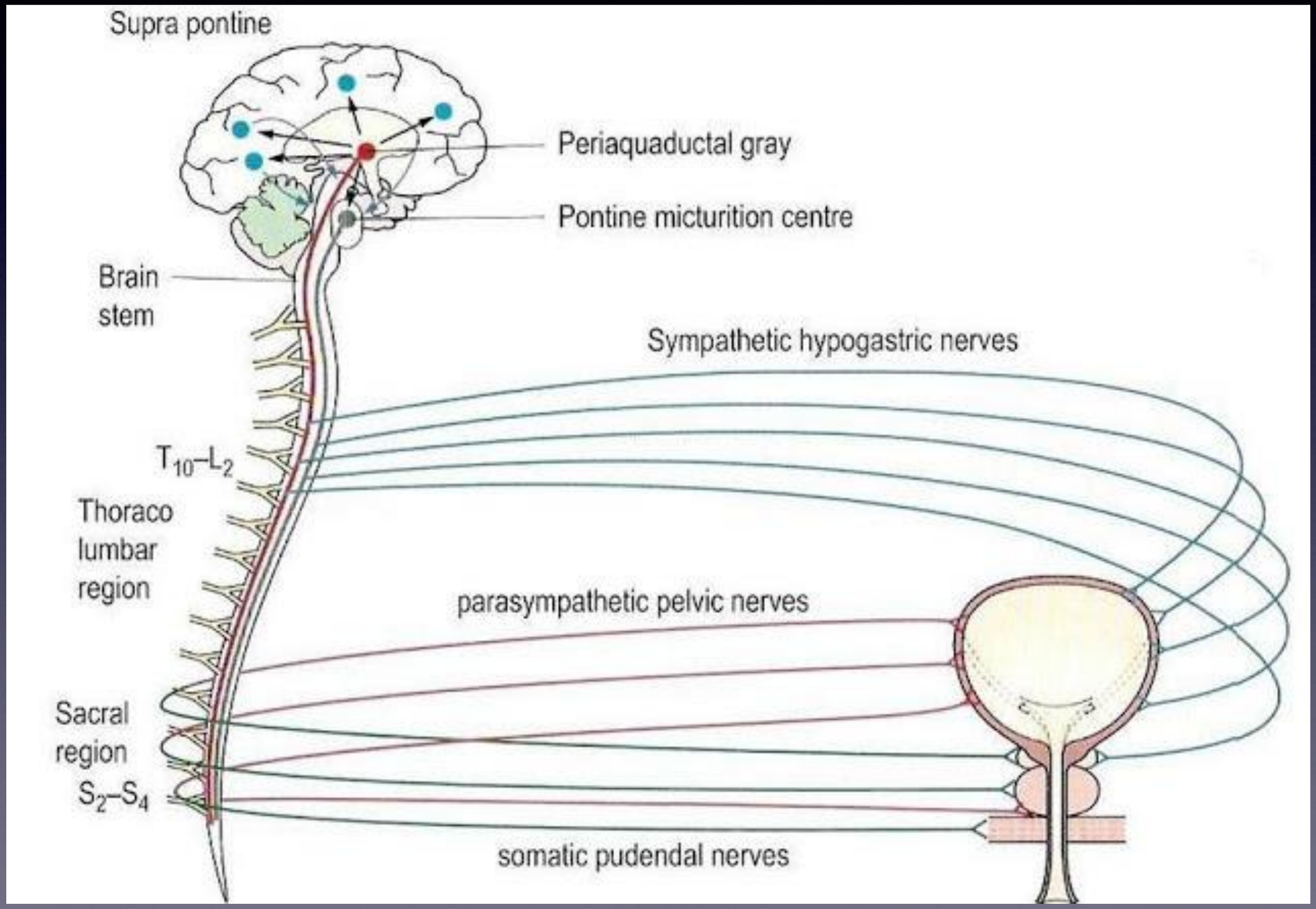
Botox



Botox:
Mode of action

- Research ongoing, exact mechanisms still uncertain
- But, thought to:
    - Inhibit release of acetylcholine, ATP and substance P from urothelium
        - Implicated in mediating reflexes that lead to OAB
    - Have an effect on C-fibre sensory afferents in bladder
- Thus, effect on both detrusor and sensory components

Control of micturition



Botox:
The evidence

- Cochrane review 2011
  - Mainly neurogenic patients, some idiopathic
  - All trials demonstrated superiority of Botox over placebo
  - Larger doses (2-300U) superior to lower doses (1-150U), but more side effects
  - Repeated doses - no evidence that patients become refractory
  - Botox A superior to Botox B

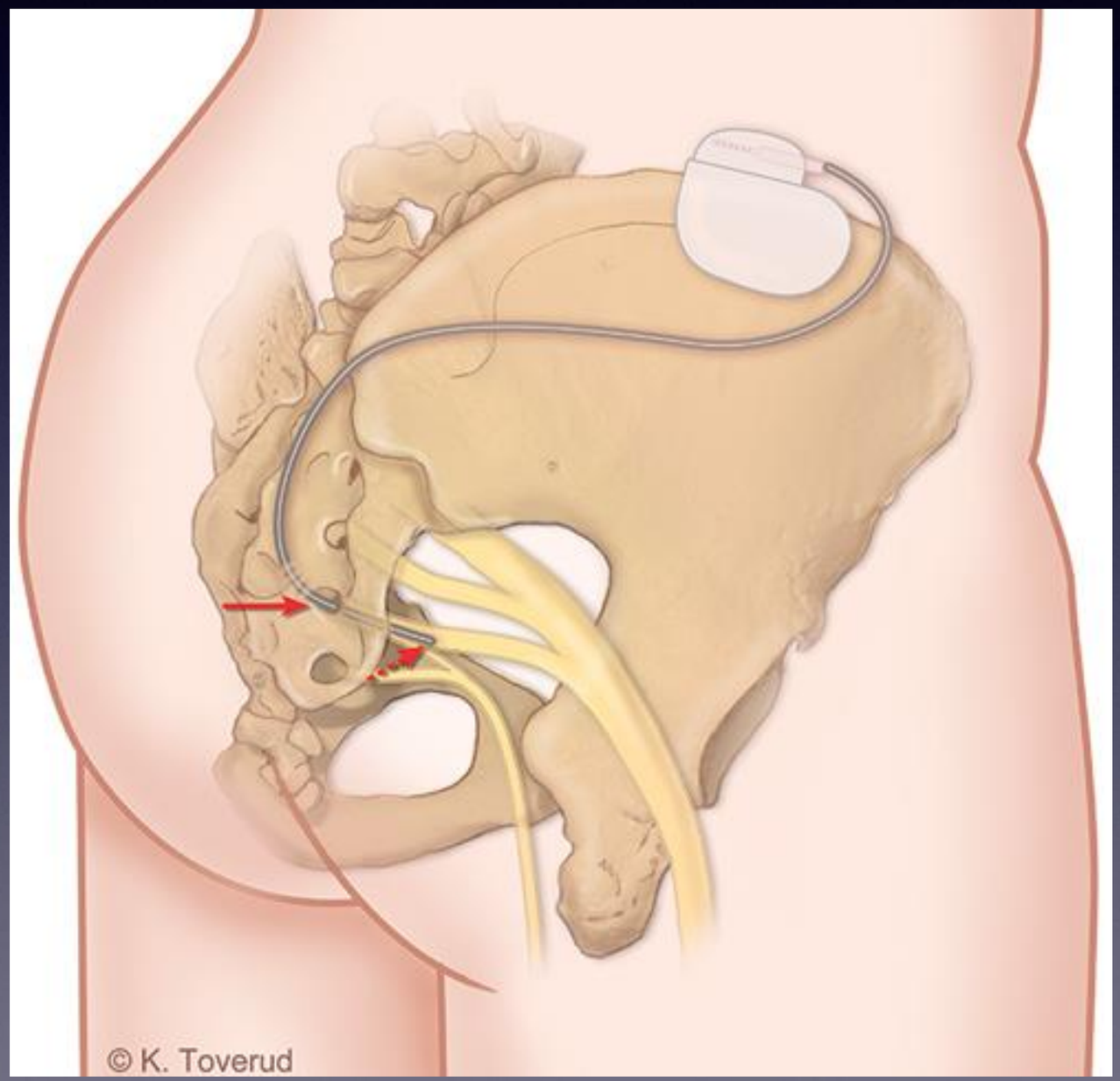
Botox:
The evidence

- Significant response in 60-90%
- Of pts with OAB wet: up to 66% may achieve complete continence
- Duration of effect 3-12 months
- CISC
  - Surprisingly no actual figures given
  - PVR raised in 72%, but many not clinically significant
  - I counsel 20% risk
  - BAUS info leaflet - >10% risk

Botox:
NICE guidance

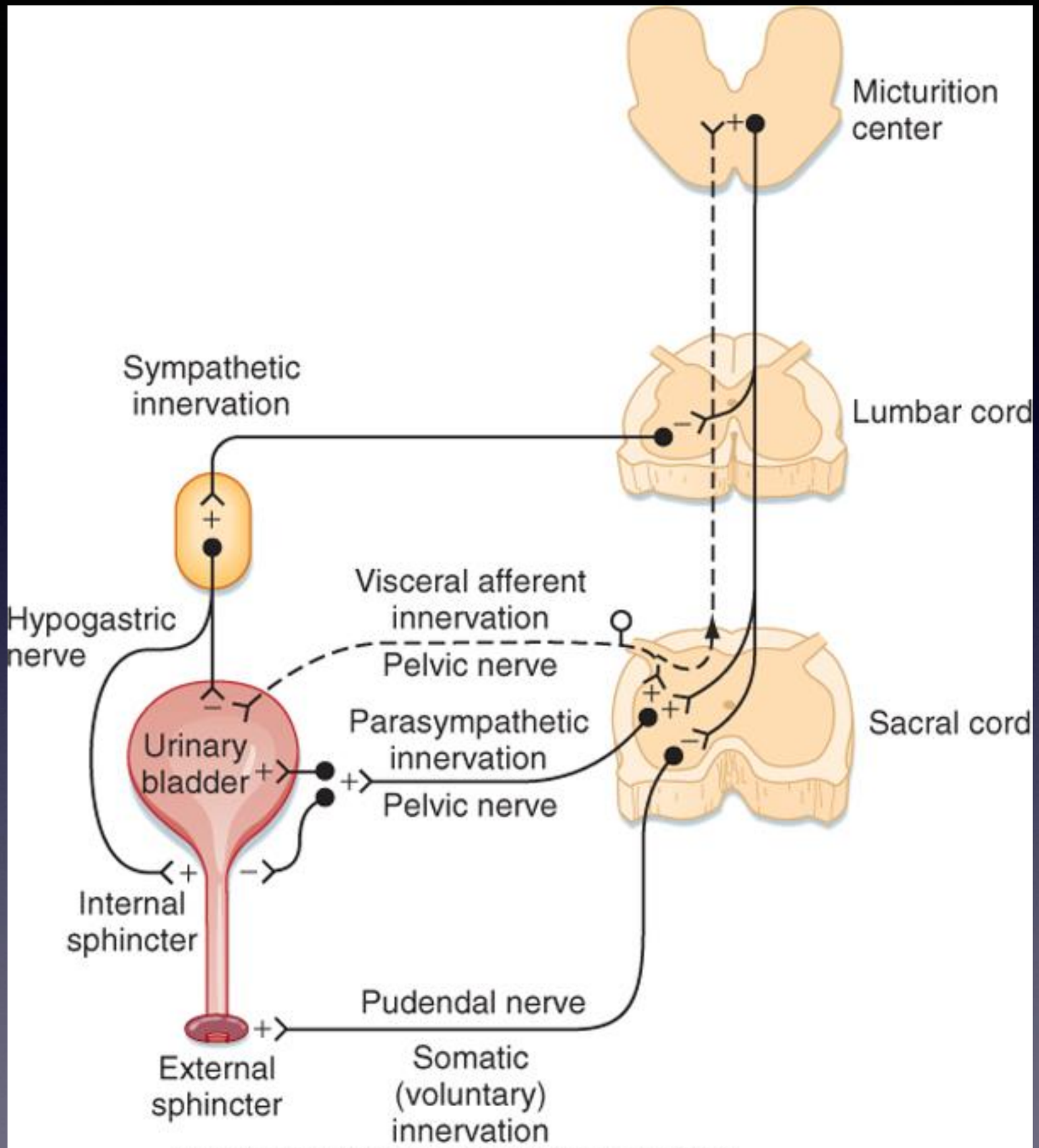
- After MDT review, offer Botox A to women with proven detrusor overactivity and failed conservative management
- Discuss risks and benefits before seeking consent
- Start treatment only if women have been trained in, and are willing and able to perform, CISC
- Offer 200U Botox A
- Can offer 100U for less CISC, but reduced chance of success

Percutaneous sacral nerve stimulation



Percutaneous SNS: Mode of action

- Electrical stimulation of sacral reflex pathway
- Inhibits reflex behavior of bladder and so reduces detrusor overactivity
- Permantly impantable sacral nerve root stimulators
    - S3 nerve roots



Percutaneous SNS: Efficacy

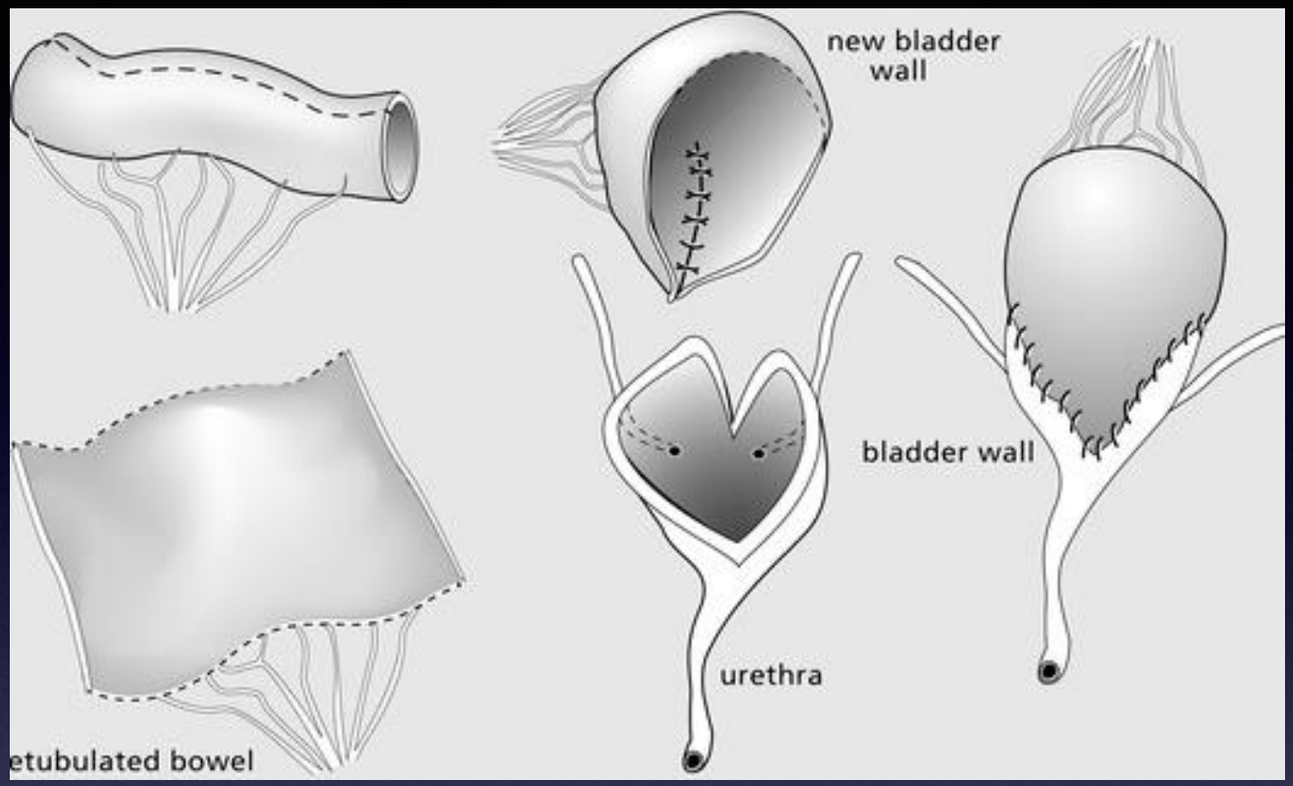
- Patients initially have temporary test leads inserted
- 50% respond and these may go on to permanent implant
- Permanent SNS
    - At 18 months 50% dry, further 25% have 50% reduction in leakage
    - Response for 3-5 years
        - Data from NICE guidelines

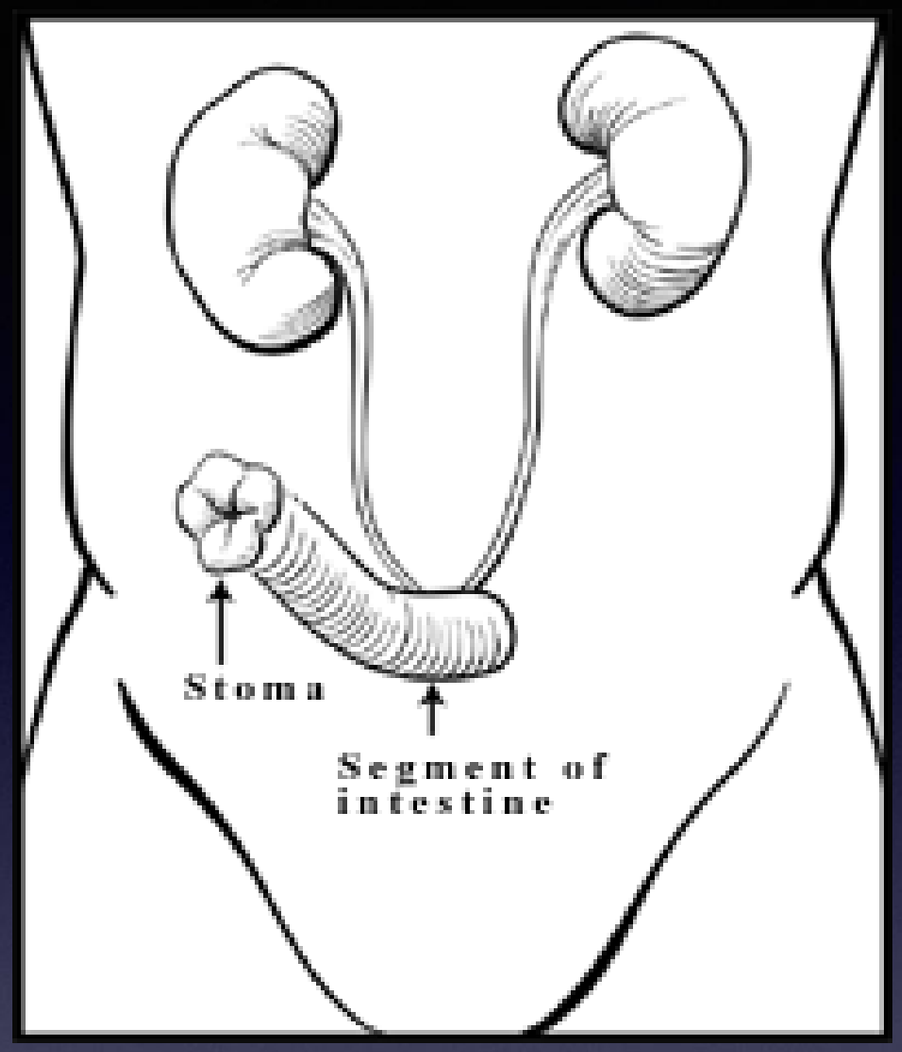
Percutaneous SNS: Adverse events

Problem	Median	Range
Pain	11%	2-34%
Techinical device problems	11%	3-42%
Lead problems	6%	3-11%
Surgical intervention	22%	7-66%
Removal	7%	4-11%

Percutaneous SNS: NICE guidelines

- Offer after MDT review if:
    - OAB has not responded to conservative management (inc drugs) and unable to CISC
    - OAB has not responded to conservative management (inc drugs) and Botox A
- Discuss pros and cons, including:
    - Need for and success of test stimulation
    - Risks of failure, need for surgical revision and adverse effects





Augmentation cystoplasty
&
Urinary diversion

Augmentation cystoplasty

- No RCT's, data from case series
- Outcome @5yrs
    - 50% continent, 25% occasional leaks, 50% satisfied
- Adverse effects
    - UTI 50%, mucus retention requiring CISC 20%, chronic diarrhoea 12%,
    - NB metabolic disturbances (16% in one series)
- Small risk of malignant transformation - annual cystoscopy

Augmentation cystoplasty: NICE guidelines

- Restrict for management of idiopathic DO to women who have failed conservative management AND who are willing and able to self catheterise
- Pre-op counselling should include common and serious complications
- Provide life-long follow up

Urinary diversion

- Little evidence
- Common complications when done for benign disease:
    - Vesical infection 52%
    - Stoma problems and upper tract dilatation 63%
- NICE guidelines:
    - Only when conservative management has failed, and if Botox A, percutaneous SNS and augmentation cystoplasty are not appropriate or unacceptable to patient
    - Provide life-long follow up

Summary

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Questions?