

# Surgery for neurological urinary incontinence

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Affiliations to disclose<sup>†</sup>:

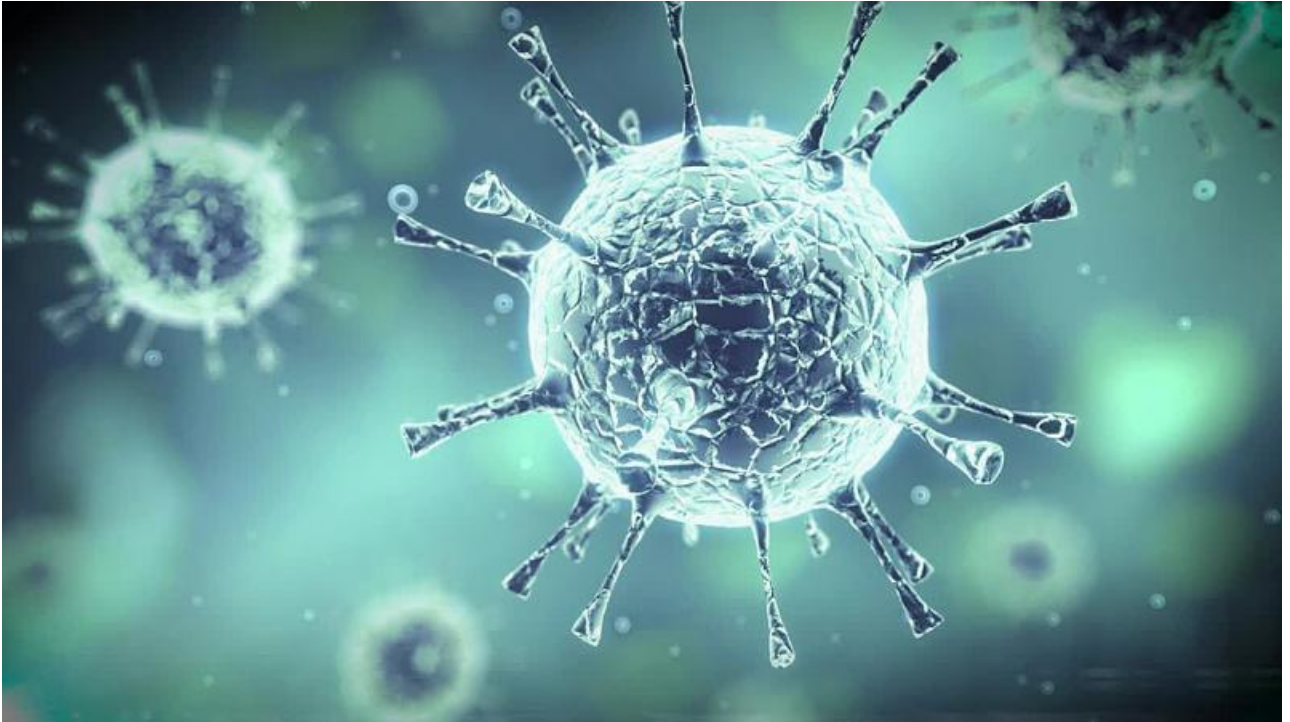
None

† All financial ties (over the last year) that you may have with any business organisation with respect to the subjects mentioned during your presentation

Funding for speaker to attend:

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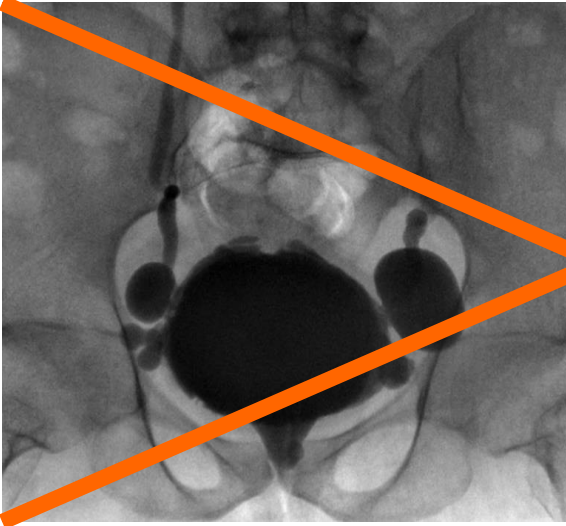
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## Introduction

Aims of surgery for neurological urinary incontinence include

- Preservation of upper urinary tract function
- Maintenance of low-pressure bladder which is both continent and completely emptying
- Control of urinary tract infections
- Enhancing quality of life

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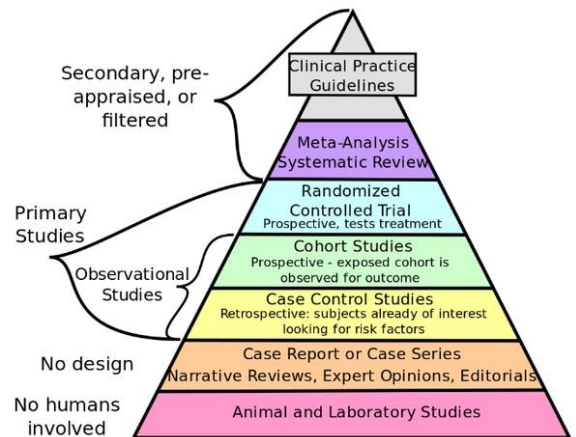


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## Methods

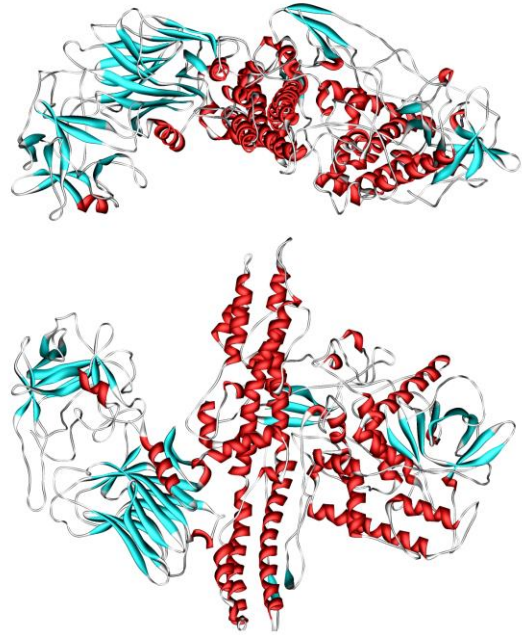
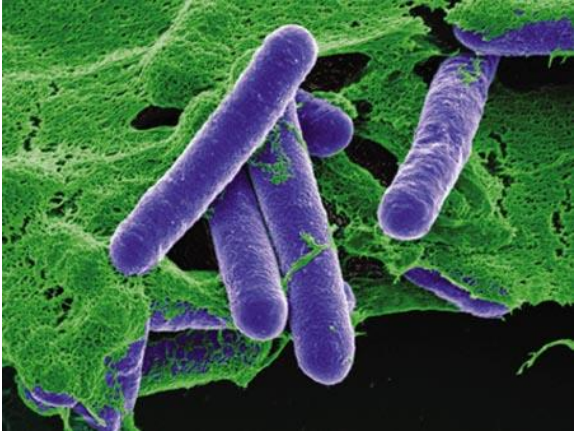
Literature search of the following databases (30 June 2021)

- Agency for Healthcare Research & Quality (AHRQ) database
- BIOSIS
- Cochrane Library
- Embase
- Medline
- Science Citation Index
- Scopus



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# Botulinum toxin injections

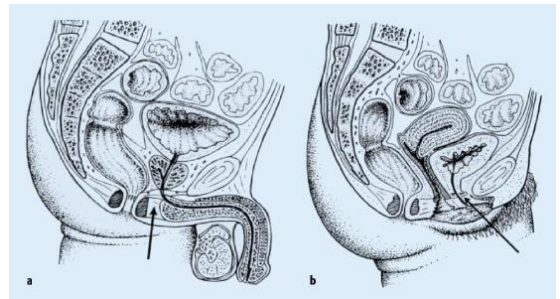


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## Botulinum toxin injections into external sphincter

Intrasphincteric injections might be effective and safe to treat detrusor sphincter dyssynergia (DSD) but

- Not licensed
- Unclear: optimal dose and mode of injection
- Duration about 3 months



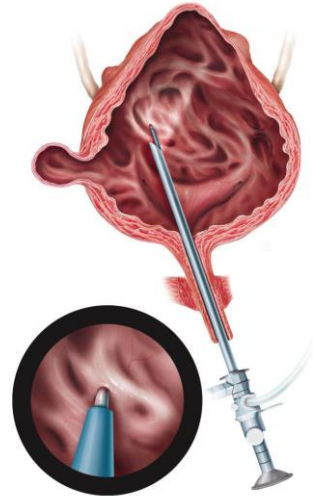
*LE 2; GR B*

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## Botulinum toxin injections into detrusor

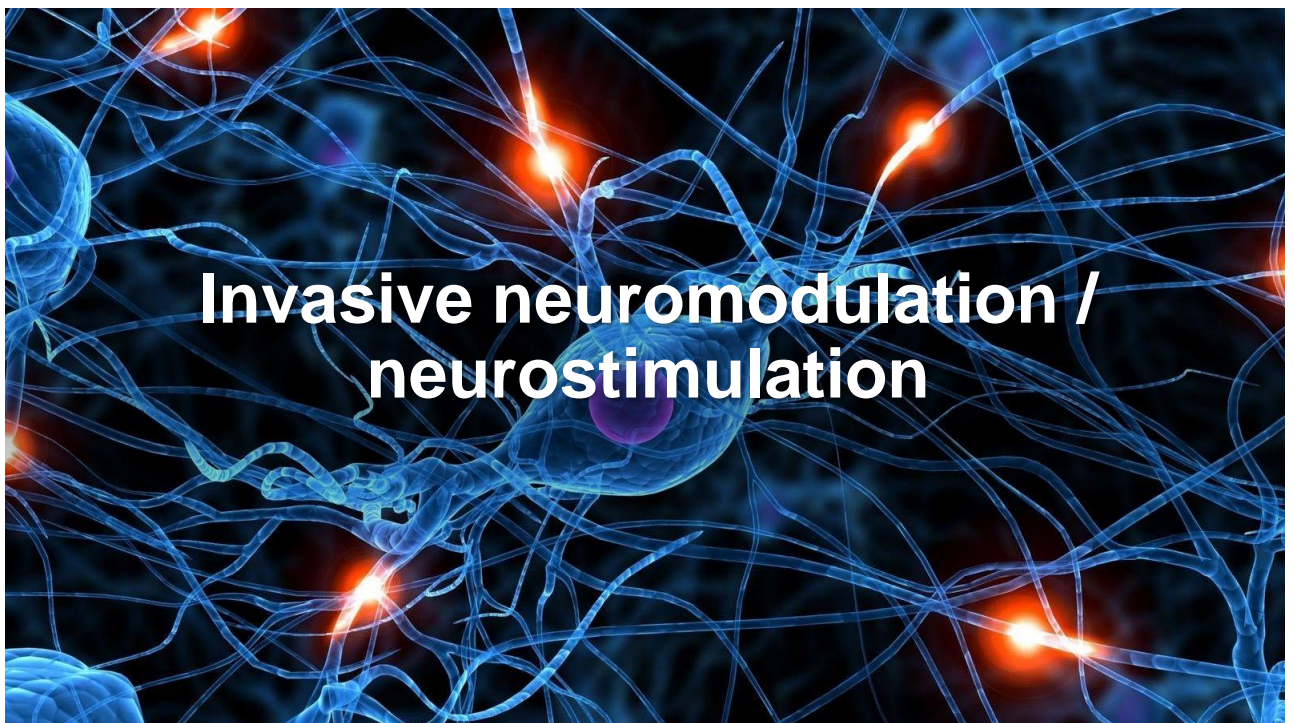
Intradetrusor botulinum toxin injections are effective and safe if antimuscarinics failed

- 100-300 units onabotulinumtoxinA
- AbobotulinumtoxinA not yet licensed
- Duration 6-14 months



*LE 1; GRA*

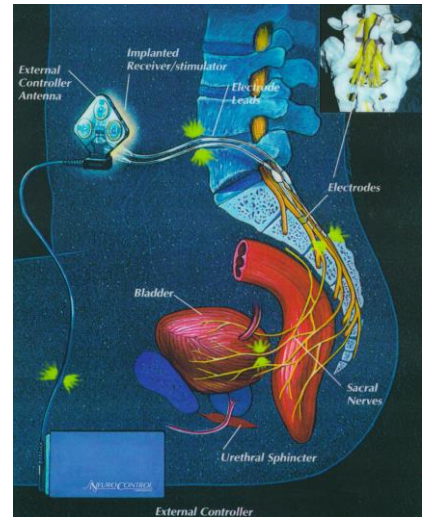
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## Sacral anterior root stimulation (SARS)

- Carefully selected patients
- Patients with complete spinal cord injury
- Post stimulus voiding
- Sacral deafferentation (dorsal rhizotomy) due to detrusor overactivity

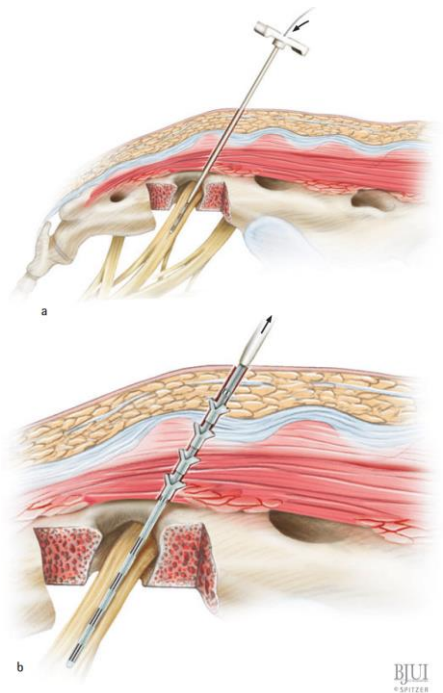


LE 3; GR C

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## Sacral neuromodulation

- Might be effective and safe but no RCTs
- Unclear: which neurological patients are most suitable



LE 2; GR B

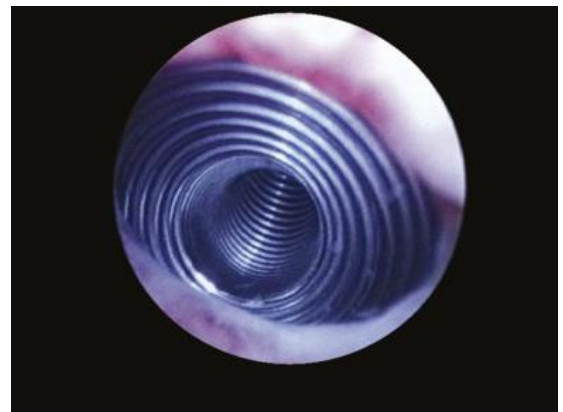
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## Urethral / prostatic stents

- Temporary versus permanent stents
- Rarely indicated
- Relevant adverse events
- Stent removal → challenge

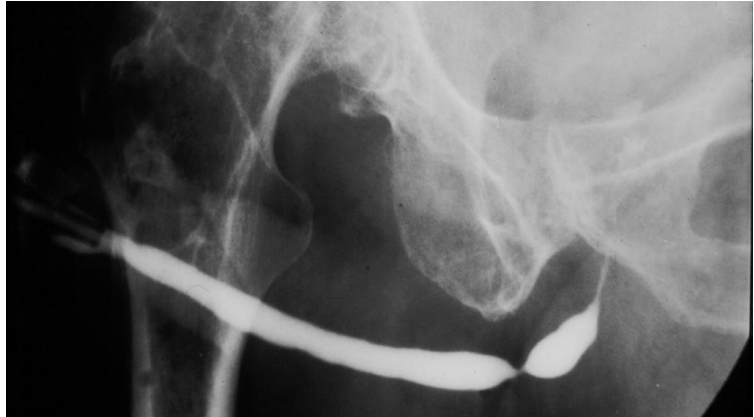


*LE 3; GR C*

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## Urethrotomy / Urethroplasty

- Patient tailored stepwise approach
- Cave: intermittent catheterization

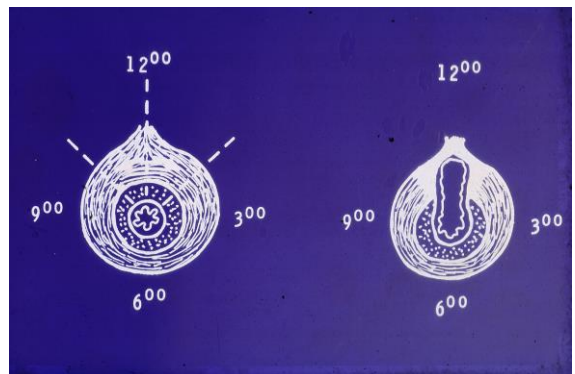


*LE 3; GR C*

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## Sphincterotomy

- In carefully selected patients
- High recurrence rate, decrease of intravesical pressure often unsatisfactory



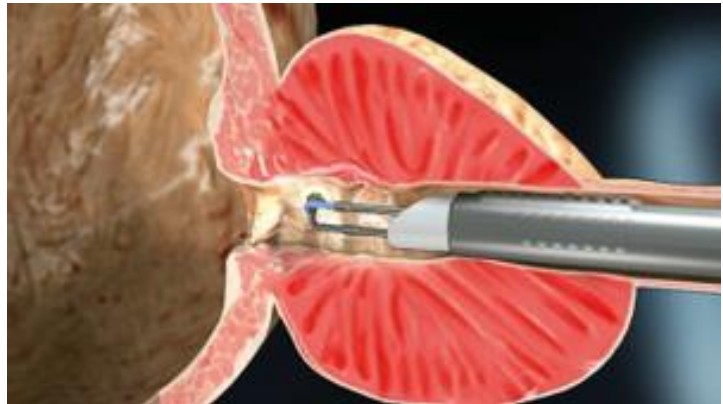
*LE 3; GR C*

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## TUR-P / other de-obstructive prostate surgery

- In carefully selected patients
- Cave: function of external urethral sphincter

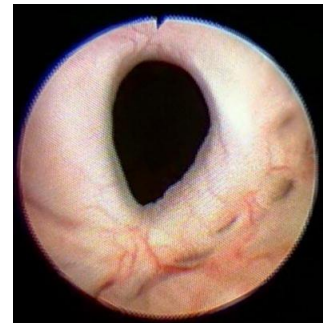


*LE 3; GR C*

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## Bladder neck resection / incision

- In case of fibrotic bladder neck



*LE 3; GR C*

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## Bulking agents

- Minimally invasive but outcomes mostly disappointing

*LE 3; GR C*

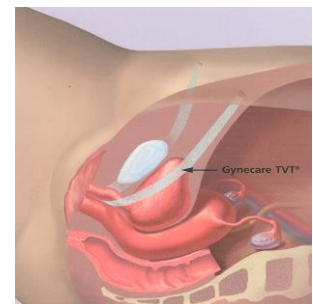


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## Urethral slings

- Autologous (preferable) and synthetic slings
- Intermittent catheterization
- De novo urgency
- Cave: relevant detrusor overactivity, relevant reflux

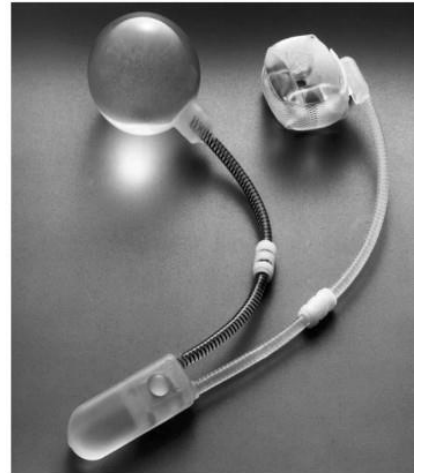
*LE 3; GR C*



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## Artificial urinary sphincter

- Gold standard
- Relevant complication / re-operation rate
- Men >>> women
- Laparoscopic approach promising

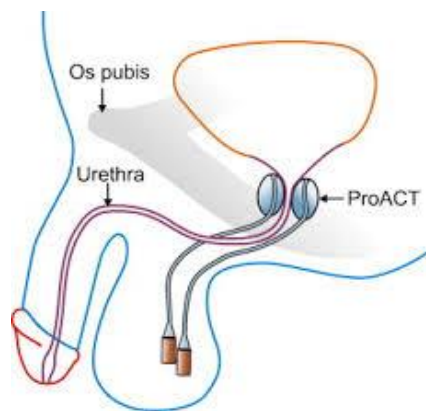


LE 3; GR C

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## Adjustable continence device (ProACT / ACT)

- Mainly in post-prostatectomy incontinence
- Experience in neurological patients very limited



LE 3; GR C

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## Bladder neck / urethral reconstruction / closure

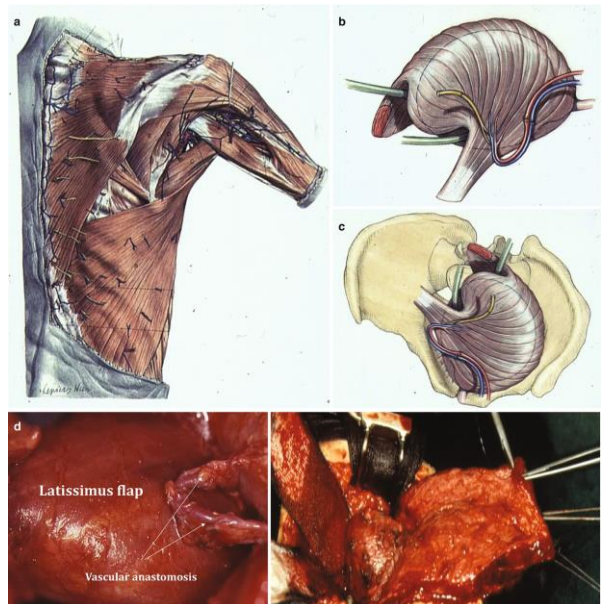
- Mainly in children
- Combined with suprapubic catheter or urinary diversion

*LE 3; GR C*

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## Bladder covering by striated muscle

- Latissimus dorsi
- Rectus abdominis

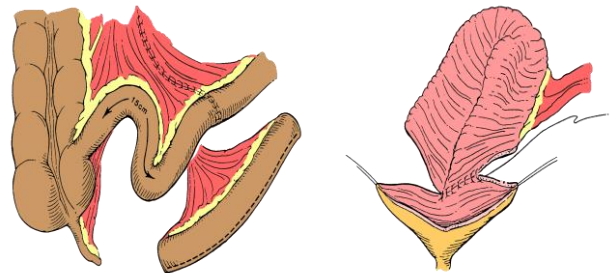


*LE 4; GR D*

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## Bladder augmentation

- Auto-augmentation (detrusor myectomy) → very rare
- Expanding / replacing by intestine (preferable ileum)
  - Intermittent catheterization
  - Cave: impaired renal function → metabolic acidosis
- Improves bladder compliance, decreases intravesical pressure



*LE 3; GR C*

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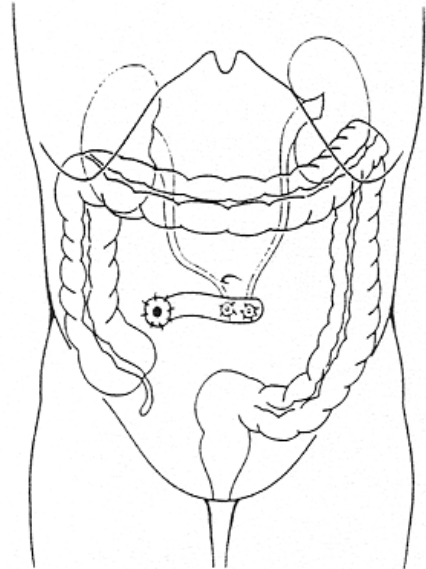
## Urinary diversion



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## Incontinent urinary diversion

- Ileal segment for diversion
- If catheterization is not possible
- Severely impaired renal function

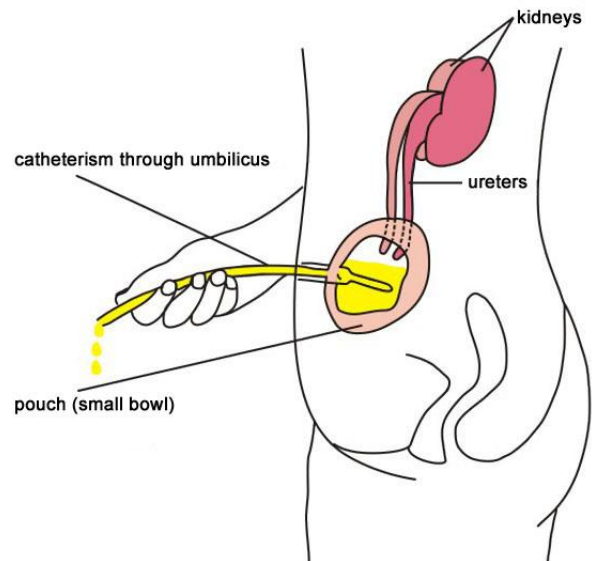


LE 3; GR C

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## Continent urinary diversion

- First choice
- Limited dexterity: stoma versus urethra
- Relevant complications and re-operation rate



LE 3; GR C

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## Undiversion

- Rarely indicated
- Patients carefully informed
- Meticulously planned

*LE 4; GR D*



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## Conclusions

- Level of evidence (LE) 1 to 4 → mostly 3 and 4
- Grade of recommendation (GR) A to D → mostly C

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## **Recommendations for practice & research**

- Well-designed, adequately powered and sampled prospective studies are urgently needed in surgery for neurological urinary incontinence
- While awaiting high-level evidence studies, current best clinical practice management is justified