**Treatment Algorithm for Autonomic Dysreflexia (Hypertensive Crisis) in Spinal Cord Injury**

**Symptoms and signs of Autonomic Dysreflexia**
ASK PERSON AND CARER IF A CAUSE IS SUSPECTED
(Common causes to exclude first are:

**Check Blood Pressure (BP)**
Is BP ≥ 20mmHg above resting level? (NB BP in a person with tetraplegia or high paraplegia is typically low e.g. 90-100/60mmHg)

**NOTE**: THIS REQUIRES IMMEDIATE INTERVENTION
Monitor BP & pulse until symptoms have resolved
Sit person upright and lower legs, if possible
Loosen any tight clothing/leg straps
Remove compression stockings/abdominal binder

**CHECK FOR BLADDER DISTENSION**
How does person empty bladder?

**By intermittent self-catheterisation, reflex or ‘spontaneous’ voiding**

**Check BP before proceeding. Is systolic BP ≥170mmHg?**

**Insert generous amount of lignocaine 2% (topical anaesthetic) gel into urethra; wait 3-5 mins and pass/replace catheter**

**If the bladder is overdistended, drain 500mls initially, then 250mls every 10-15 mins to avoid hypotension.**
NB. Commence anticholinergic medication (eg Oxybutynin) if the IDC is left in situ.

**Is rectum empty?**

**LOOK FOR OTHER CAUSES OF NOCICEPTION**
Exclude intra-abdominal pathology, epididymo-orchitis, pressure sores, burns, ingrown toenail, fracture.
Ensure adequate analgesia (eg. morphine) is given when there is a persisting known cause of noxious stimulation

**If BP not settling promptly or cause not identified, admit to hospital for BP control & investigation.**

**Intravenous medication may be necessary**
Contact Spinal Unit for specialist advice if required

**Check for kinked tubing, full leg bag or blocked catheter**
Estimate volume in leg bag; compare with fluid intake & usual urine drainage pattern

**By indwelling urethral (IDC) or suprapubic catheter (SPC)**

**IDC/SPC is blocked**
Irrigate catheter gently with no more than 30mls of normal saline

**Is catheter now draining?**

**If rectum is full and systolic BP < 150mmHg, perform manual evacuation**

**MONITOR FOR HYPOTENSION**

**WARNING:**
BEFORE ADMINISTERING ANY ANTI-HYPERTENSIVE MEDICATION, ALWAYS CHECK FOR RECENT USE OF MEDICATION FOR ERECTILE DYSFUNCTION.

DO NOT USE GLYCERYL TRINITRATE SPRAY, TABLETS OR PATCH IF SILDENAFIL (VIAGRA) OR VARDENAFIL (LEVITRA) HAS BEEN USED IN LAST 24 HOURS OR TADALAFIL (CIALIS) HAS BEEN TAKEN WITHIN LAST 4 DAYS!

**CHECK FOR CONSTIPATION**
Insert generous amount of lignocaine 2% (topical anaesthetic) gel into rectum; wait 3-5 mins, then perform gentle PR exam

**Is rectum empty?**

**If rectum is overdistended, drain 500mls initially, then 250mls every 10-15 mins to avoid hypotension.**

NB. Commence anticholinergic medication (eg Oxybutynin) if the IDC is left in situ.

**If Systolic BP > 150mmHg**
1. Administer glyceryl trinitrate or captopril as above.
2. If AD worsens with disimpaction, STOP immediately, instill additional topical anaesthetic and recheck the rectum for the presence of stool after approximately 20 minutes.

**Safety Notice 014/10**

**Monitor BP for 1hr**
Contact Spinal Unit for specialist advice if required

**If systolic BP increases ≥ 20mmHg above resting level?**

**Check for kinked tubing, full leg bag or blocked catheter**

**Is catheter draining satisfactorily?**

**Monitor BP for 4 hours to ensure no recurrence**
- if symptomatic hypotension, lay the person down and elevate legs
- IF SYMPTOMS RECUR CONTACT A SPINAL PHYSICIAN URGENTLY

**Is BP settling down?**

**CHECK FOR BLADDER DISTENSION**
How does person empty bladder?

**By intermittent self-catheterisation, reflex or ‘spontaneous’ voiding**

**Check BP before proceeding. Is systolic BP ≥170mmHg?**

**INSERT GENEROUS AMOUNT OF LIGNOCaine 2% (TOPICAL ANAESTHETIC) GEL INTO URETHRA; WAIT 3-5 MINS AND PASS/REPLACE CATHETER**

**If the bladder is overdistended, drain 500mls initially, then 250mls every 10-15 mins to avoid hypotension.**
NB. Commence anticholinergic medication (eg Oxybutynin) if the IDC is left in situ.

**Is BP settling down?**

**CHECK FOR CONSTIPATION**
Insert generous amount of lignocaine 2% (topical anaesthetic) gel into rectum; wait 3-5 mins, then perform gentle PR exam

**Is rectum empty?**

**LOOK FOR OTHER CAUSES OF NOCICEPTION**
Exclude intra-abdominal pathology, epididymo-orchitis, pressure sores, burns, ingrown toenail, fracture.
Ensure adequate analgesia (eg. morphine) is given when there is a persisting known cause of noxious stimulation

**If BP not settling promptly or cause not identified, admit to hospital for BP control & investigation.**

**Intravenous medication may be necessary**
Contact Spinal Unit for specialist advice if required

**DISCLAIMER**
All recommendations are intended for people with spinal cord injury as a group. Individual therapeutic decisions must be made by combining the recommendations with clinical judgement, informed by a detailed knowledge of the individual person’s unique risks and medical history, findings on physical examination, as well as the resources available.

This revised algorithm was re-endorsed for use by the Australian and New Zealand Spinal Cord Society (ANZSCCS) in September 2010.

This project was funded by the Motor Accidents Authority of NSW.

**CONTACT SPINAL PHYSICIAN/REGISTRAR ON CALL AT YOUR NEAREST SPINAL INJURIES UNIT FOR SPECIALIST ADVICE**

**WARNING:**
BEFORE ADMINISTERING ANY ANTI-HYPERTENSIVE MEDICATION, ALWAYS CHECK FOR RECENT USE OF MEDICATION FOR ERECTILE DYSFUNCTION.

DO NOT USE GLYCERYL TRINITRATE SPRAY, TABLETS OR PATCH IF SILDENAFIL (VIAGRA) OR VARDENAFIL (LEVITRA) HAS BEEN USED IN LAST 24 HOURS OR TADALAFIL (CIALIS) HAS BEEN TAKEN WITHIN LAST 4 DAYS!

**CHECK FOR CONSTIPATION**
Insert generous amount of lignocaine 2% (topical anaesthetic) gel into urethra; wait 3-5 mins and pass/replace catheter

**Is BP settling down?**

**CHECK FOR BLADDER DISTENSION**
How does person empty bladder?

**By intermittent self-catheterisation, reflex or ‘spontaneous’ voiding**

**Check BP before proceeding. Is systolic BP ≥170mmHg?**

**INSERT GENEROUS AMOUNT OF LIGNOCaine 2% (TOPICAL ANAESTHETIC) GEL INTO URETHRA; WAIT 3-5 MINS AND PASS/REPLACE CATHETER**

**If the bladder is overdistended, drain 500mls initially, then 250mls every 10-15 mins to avoid hypotension.**
NB. Commence anticholinergic medication (eg Oxybutynin) if the IDC is left in situ.

**Is BP settling down?**

**CHECK FOR CONSTIPATION**
Insert generous amount of lignocaine 2% (topical anaesthetic) gel into rectum; wait 3-5 mins, then perform gentle PR exam

**Is rectum empty?**

**LOOK FOR OTHER CAUSES OF NOCICEPTION**
Exclude intra-abdominal pathology, epididymo-orchitis, pressure sores, burns, ingrown toenail, fracture.
Ensure adequate analgesia (eg. morphine) is given when there is a persisting known cause of noxious stimulation

**If BP not settling promptly or cause not identified, admit to hospital for BP control & investigation.**

**Intravenous medication may be necessary**
Contact Spinal Unit for specialist advice if required

**DISCLAIMER**
All recommendations are intended for people with spinal cord injury as a group. Individual therapeutic decisions must be made by combining the recommendations with clinical judgement, informed by a detailed knowledge of the individual person’s unique risks and medical history, findings on physical examination, as well as the resources available.

This revised algorithm was re-endorsed for use by the Australian and New Zealand Spinal Cord Society (ANZSCCS) in September 2010.

This project was funded by the Motor Accidents Authority of NSW.

**WARNING:**
BEFORE ADMINISTERING ANY ANTI-HYPERTENSIVE MEDICATION, ALWAYS CHECK FOR RECENT USE OF MEDICATION FOR ERECTILE DYSFUNCTION.

DO NOT USE GLYCERYL TRINITRATE SPRAY, TABLETS OR PATCH IF SILDENAFIL (VIAGRA) OR VARDENAFIL (LEVITRA) HAS BEEN USED IN LAST 24 HOURS OR TADALAFIL (CIALIS) HAS BEEN TAKEN WITHIN LAST 4 DAYS!

**CHECK FOR CONSTIPATION**
Insert generous amount of lignocaine 2% (topical anaesthetic) gel into urethra; wait 3-5 mins and pass/replace catheter

**Is BP settling down?**

**CHECK FOR BLADDER DISTENSION**
How does person empty bladder?

**By intermittent self-catheterisation, reflex or ‘spontaneous’ voiding**

**Check BP before proceeding. Is systolic BP ≥170mmHg?**

**INSERT GENEROUS AMOUNT OF LIGNOCaine 2% (TOPICAL ANAESTHETIC) GEL INTO URETHRA; WAIT 3-5 MINS AND PASS/REPLACE CATHETER**

**If the bladder is overdistended, drain 500mls initially, then 250mls every 10-15 mins to avoid hypotension.**
NB. Commence anticholinergic medication (eg Oxybutynin) if the IDC is left in situ.

**Is BP settling down?**

**CHECK FOR CONSTIPATION**
Insert generous amount of lignocaine 2% (topical anaesthetic) gel into rectum; wait 3-5 mins, then perform gentle PR exam

**Is rectum empty?**

**LOOK FOR OTHER CAUSES OF NOCICEPTION**
Exclude intra-abdominal pathology, epididymo-orchitis, pressure sores, burns, ingrown toenail, fracture.
Ensure adequate analgesia (eg. morphine) is given when there is a persisting known cause of noxious stimulation

**If BP not settling promptly or cause not identified, admit to hospital for BP control & investigation.**

**Intravenous medication may be necessary**
Contact Spinal Unit for specialist advice if required

**DISCLAIMER**
All recommendations are intended for people with spinal cord injury as a group. Individual therapeutic decisions must be made by combining the recommendations with clinical judgement, informed by a detailed knowledge of the individual person’s unique risks and medical history, findings on physical examination, as well as the resources available.

This revised algorithm was re-endorsed for use by the Australian and New Zealand Spinal Cord Society (ANZSCCS) in September 2010.

This project was funded by the Motor Accidents Authority of NSW.