

Epidural Quick Guide

Dermatome Checking:

Local anaesthetics block the conduction of sensory, motor and sympathetic nerve fibres. Blocking the sensory nerves alters the pain perception and also skin sensation as the spinal nerves supply specific areas of the skin, known as **dermatomes**.

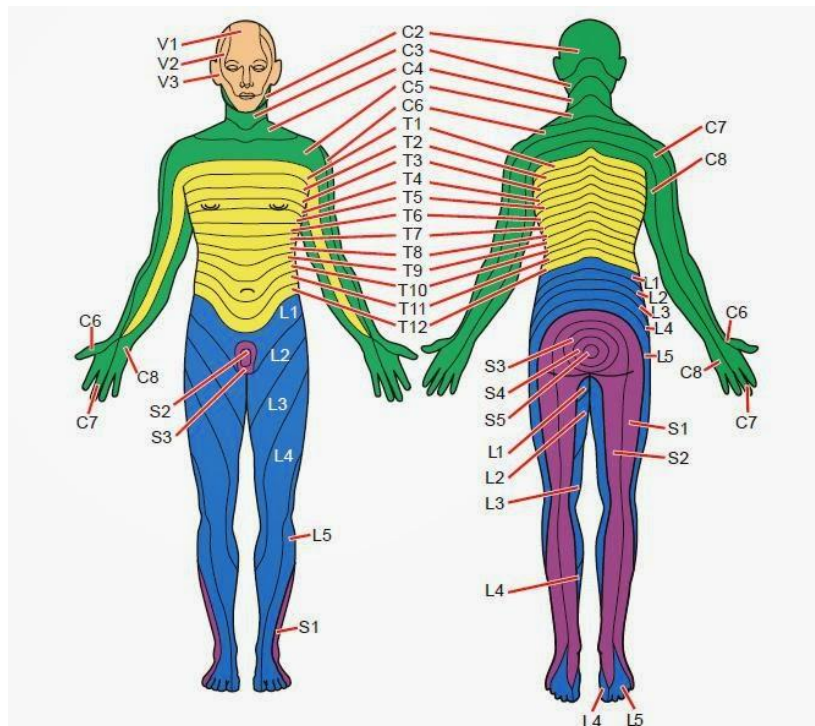
We need to be aware of the expected level of block to know if the height of the block is increasing. *However, the absolute level of block is not vital so long as the block is working, the patient can move arms normally and breathe without respiratory embarrassment (shallow breathing and weakness).*

- That the block covers the area it should block i.e. surgical incision.
- The block is not too high.
- Not too dense that motor nerves are also being blocked. Excessive motor weakness may indicate that the infusion rate is too high, the catheter has migrated or that an epidural abscess or haematoma is forming.

How to check the dermatome level:

You may find that everyone assesses dermatomes differently but if you are unsure then the following guide may be useful;

1. Gather equipment, on our unit we normally check dermatome levels using ethyl chloride spray (axongesic) but you can also use ice in a glove if the spray is not available!
2. Ensure patient dignity is maintained, close the curtains!
3. Explain to the patient what you are going to do and why it is necessary.
4. Uncover necessary areas and place the ice or spray on an area that is unlikely to be affected by the block i.e. face or arm. Ask the patient if it feels cold – they should say yes!
5. Then place ice or spray an area close to the incision site and ask the patient if it feels as cold as when on face or arm.
6. Continue this above and below incision site and compare left and right sides at all times (will help you determine if the block is unilateral or bilateral).
7. Document at what level the patient detects altered sensation as per a dermatome chart.



STOP THE EPIDURAL INFUSION IF NIPPLES ARE NUMB (T4), ARMS ARE WEAK/NUMB (T1) AND IF THERE IS ANY DIFFICULTY IN BREATHING (C5) !!

Other points:

- If the block is ineffective increase the infusion within prescription limits or give bolus if authorised to do so.
- Sit patient up more if the block is high as gravity will help decrease the block.
- If the block is unilateral (one sided) then position the patient on side with little or no block.
- The catheter may be in too far and so the anaesthetist may withdraw it by 1-2cms.
- If the patients BP drops lie the patient flat NOT head down as the gravity will spread the epidural block higher.

When to check? At least once per shift, ideally more often however, especially if any change to epidural rate or change in patients condition.

Anticoagulation

Epidural haematomas are a rare but potentially devastating complication. They are rare in patients with normal bleeding/clotting but anticoagulation increases the risk (which nearly all of our patients are on!).

Insertion:

- 12 hours after thromboprophylactic LWMH
- 6 hours after thromboprophylactic heparin
- Clopidogrel should be stopped 10 days prior to planned epidural
- 24 hours after therapeutic doses of LWMH
- Therapeutic heparin - ensure clotting has returned to normal prior to epidural insertion

Removal:

- 12 hours after LWMH
- 6 hours after standard heparin
- 18 hours after Rivaroxaban

Also consider patients clotting:

- PT no greater than 50% more than control
- INR <1.5
- PTT no greater than 7 seconds over control
- Platelets >80x10/L.

Then give next anticoagulant dose:

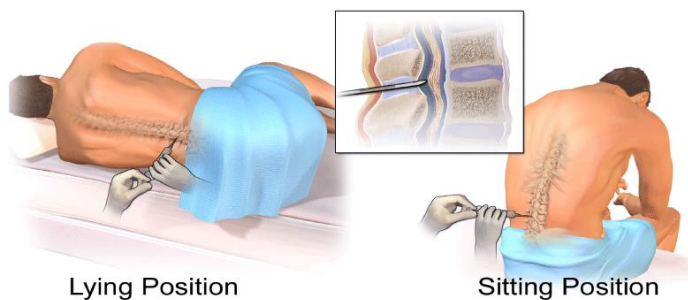
- LWMH → no sooner than 4 hours after
- Standard heparin → no sooner than 4 hours
- Rivaroxaban → 6 hours after

Removal of epidural catheters:

- Catheters should ideally only be in place between 3-5 days.
- The infusion should not be titrated down, it should be stopped and switched off and the catheter and infusion left in situ.
- Alternative analgesia will usually be needed as soon as the epidural infusion is stopped ☒ if oral analgesia is effective then the catheter can be removed.

How to remove:

1. **Aseptic** procedure
2. Position patient with **back flexed** to aid removal (either upright or on side)



These positions aid removal as the catheter is less likely to be gripped by the vertebral arches.

3. The catheter should **slide out with no resistance**. If there is some resistance ask the patient to flex their back more. If difficult to remove or still too much resistance then contact an anaesthetist or pain management team for assistance.
4. Check **tip is present**, if not then inform the anaesthetist and pain management team. It is often best to leave alone and not go for surgical exploration as this may cause more damage, DATIX the incident. The tip may also need to be sent for MC&S if infection is suspected.
5. Inform a doctor if the site **bleeds, oozes clear fluid, or pus!**
6. Spray puncture site with Opsite (if available) and apply a sterile dressing to be kept in place for 24 hours.
7. Continue 4 hourly obs and Bromage Score for 24 hours after removal.

Epidural haematomas are most likely to occur after removal.

The Bromage Scale/Score:

The Bromage Scale assesses leg strength/movement. A score of 2 or 3 may indicate a developing epidural haematoma, abscess or catheter migration.

SCORE OF 2 OR 3 – STOP EPIDURAL AND CALL ANAESTHETIST

Bromage Scale		
Grade	Criteria	Degree of block
0	Free movement of legs and feet	Nil (0%)
1	Just able to flex knees with free movement of feet	Partial (33%)
2	Unable to flex knees, but with free movement of feet	Almost complete (66%)
3	Unable to move legs and feet	Complete (100%)

Observations:

BP, HR, RR, Bromage score, sedation score, nausea and vomiting score, pain score:

- Every 5 minutes for 15 minutes and after a bolus
- Then every 15 minutes for 1 hour
- If patient is stable 1 hourly for 4 hours then 2 hours for the duration of the infusion.
- Every 30 minutes for 1 hour after rate change

Temperature should be checked at least 4 hourly.

Urine output should be documented also, particularly if patient is not catheterised as urinary retention may occur.

Good practice points:

- Epidurals improve oxygenation and reduce pulmonary infections compared with the use of parenteral opioids.
- Complications include but are not limited to; *inadequate analgesia, hypotension, motor block, urinary retention, pruritus (itching), pressure sores, respiratory depression, post-dural puncture headache, epidural haematoma or abscess, neurological damage.*
- Epidurals should be avoided in patients who are fully anticoagulated.
- Patients must have IV access during and 12 hours after epidural infusion.
- Do not use other opioids with an epidural infusion unless prescribed with reason by anaesthetist.



- ‘FOR EPIDURAL USE ONLY’ should be labelled on both sides of infusion bag and the yellow epidural giving set line should also be labelled with this.
- The epidural giving set should only have luer lock connections with no 3-way taps or other injection points.
 - Ensure that when changing an epidural bag you do only this and not any other IV drugs at the same time in order to avoid giving via the wrong routes – administering IV drugs via epidural can severely harm or cause the death of the patient
 - The epidural should be secured using an epidural catheter fixation device, connected to a bacterial filter (effective up to 4 days), then the yellow epidural giving set.
 - Catheter should be taped up the patients back and filter resting on gauze in region of infraclavicular hollow and taped.
 - Insertion site dressing must be clear for visual inspection.
 - Site inspected each shift for signs of infection, pain, tenderness, swelling, discharge or redness, if any are present inform doctor.
 - Disconnection between the filter and catheter may lead to infection or epidural abscess. **Unwitnessed** – consult with anaesthetist for appropriate action, may need to discontinue epidural and remove catheter when safe to do so. **Witnessed** – in some cases the catheter can be cleaned aseptically and 10cm cut off with sterile blade and connected to new filter and infusion continued.
 - Ensure pressure area care is maintained.
 - Patients can be mobilised but ensure assistance of 2 at all times and consider postural hypotension, loss of joint position and leg weakness.
 - Headaches that are caused by dural tap can be severe, lay the patient supine, ensure adequate hydration, and give paracetamol.