

PAEDIATRIC NURSING PRACTICE MANUAL
SECTION 5

SPECIMEN COLLECTION

5.6 CEREBRO SPINAL FLUID

5.6.1 LUMBAR PUNCTURE (NON THERAPEUTIC)

Aims

1. To ensure the safety and comfort of the infant/child, during the removal of cerebrospinal fluid (CSF) from the sub arachnoid space.
2. To assist medical staff during this procedure.

Key points

1. For therapeutic lumbar puncture refer to Ward 3B Oncology Standards.
2. This is a sterile [aseptic technique](#).
3. Medical Staff should obtain informed verbal consent.¹
4. Pain and anxiety are often experienced during this procedure; age appropriate methods to reduce these feelings should be considered ie. topical analgesia (refer to Protocol for the use of the topical anaesthetic agent), sucrose, adequate preparation and distraction.¹
5. Two nurses are usually required, one to assist the doctor and one to comfort and hold the child. Refer to [PNPM 1.11](#) Clinical Holding
6. If the procedure is to be done under local anaesthetic, the doctor may order sedation prior to the procedure. Also refer to [PNPM 2.11](#) Administration of Sedative Drugs and Anaesthetic Agents and [PNPM 2.11.1](#) Recommendations for Oral Conscious Sedation of Children being Performed by Non Anaesthetic Personnel.
7. Current available evidence does not support bed rest over immediate mobilisation in the reduction of postural headaches; therefore routine bed rest is not required.²

Equipment

70% Alcohol (for decontaminating trolley)
Dressing pack
Dressing trolley
Sterile gown
Sterile gloves
Sterile hand towel(s) +/- Sterile lithotomy sheet
Sterile gauze
2 maxi swab stick (impregnated with 2% chlorhexidine and 70% alcohol)
Lumbar puncture needle as ordered (size depends on age of child)
CSF specimen bottles x 2
Small transparent, semi-permeable, occlusive dressing

Additional equipment which may be required

Surgical face mask
Protective eye goggles
Manometer set (not routinely performed in children during a lumbar puncture) ¹
Local anaesthetic as ordered
Sterile 5mL syringe
Sterile needles

PROCEDURE	ADDITIONAL INFORMATION
<p>Nurse holding patient</p> <p>Position patient facing holding nurse on their side (lateral recumbent position). With their knees drawn up to chest, chin to chest and body well flexed. The hips should be vertical to align the iliac crests, with the patients back close to the edge of the bed. Support this position by placing your arms under the patient's knees and shoulders.</p> <p>Note: Appropriate positioning increases the interspinous distance facilitating access to meninges and CSF.</p>	<p>Some children may prefer to sit up.¹ Aim for maximum flexion of the spine (curl up into foetal position).¹ Avoid over flexing the neck, especially in infants as this may cause respiratory compromise.¹</p>
<p>Assisting Nurse</p> <p>Perform hand hygiene. Decontaminate trolley with alcohol 70% prior to procedure set up. Open sterile equipment onto sterile field.</p>	
<p>If requested</p> <p>Apply skin prep. Allow 30 seconds to dry. +/- wipe with sterile gauze to ensure skin is dry.</p>	<p>30 seconds is required for antiseptic to be effective. Skin should be dry before inserting LP needle to prevent pushing antiseptic into the spinal canal.³</p>
<p>Observe the child throughout the procedure</p>	<p>Do not allow sterile sheet to cover face.</p>
<p>When the needle is removed, apply pressure using the sterile gauze.</p>	<p>Local pressure will minimise the risk of CSF leaking to the surface.⁴</p>
<p>Apply the occlusive dressing and leave intact for 24 hours.</p>	
<p>If the child develops pain, inspect site for infection. Report any oozing from the site immediately.</p>	

References:

1. Royal Children's Hospital - Melbourne. Lumbar Puncture. Clinical Practice Guidelines n.d. Available from: http://www.rch.org.au/clinicalguide/cpg.cfm?doc_id=5178. Accessed: 12 February 2010.
2. Sudlow CLM & Warlow CP. Posture and fluids for preventing post-dural puncture headache. Cochrane Database of Systematic Reviews 2 CD001790. DOI: 10.1002/14651858.CD001790. 2002. Available from: <http://mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD001790/frame.html>. Accessed: 19 February 2010.
3. Chi-Yan Lee LSennett M & Erickson J. Prevention and management of post-lumbar puncture headache in paediatric oncology patients. Journal of Paediatric Oncology Nursing.24(4):200-207; 2007.
4. Cobbett S & LeBlanc A. Minimising IV site infection while saving time and money. [Level II] Aust Infect Control 5(2):8-14; 2000.

Bibliography:

Straus SE, Thorpe KE & Holroyd-Leduc J. How do I perform a lumbar puncture and analyse the results to diagnose Bacterial Meningitis? JAMA 2006; 296(16): 2012-22.

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Cerebro Spinal Fluid
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