

**HEALTH SERVICES**

**CODE: B.2**

**NURSING PROCEDURE**

**TITLE: BACLOFEN (LIORESAL) INTRATHECAL SCREENING PROCEDURE**

**CATEGORY-CLASSIFICATION :  
RN – Special Nursing Procedure**

**PURPOSE**

- To evaluate the efficacy of intrathecal Baclofen injection in controlling intractable muscle spasms and rigidity in selected patients. For background information relevant to procedure, please see Appendix 1.

**NURSING ALERT:**

- Candidates for Intrathecal Baclofen Screening have been assessed by the neurosurgeon prior to admission. Any person who has experienced hypersensitivity to oral baclofen should not receive it by intrathecal injection. The recipient also should be free from systemic infection.
- Patients having continuous administration of Baclofen via any route (i.e. oral or intrathecal) should not have Baclofen stopped abruptly. Doses need to be tapered gradually before discontinuation as sudden withdrawal may have life-threatening consequences.
- Apply appropriate personal protective equipment (PPE) before direct contact with patient and prior to the lumbar puncture(s).

**EQUIPMENT**

1. Sterile lumbar puncture tray
2. Sterile gloves
3. Local anaesthetic (1% xylocaine)
4. Chlorhexidine 2% aqueous or other acceptable antiseptic cleansing solution
5. PPE
6. Baclofen (without preservative) for intrathecal injection, in prescribed dose
7. "Screening Procedure – Intrathecal Baclofen" flow sheet

**PROCEDURE**

1. Admit/transfer the patient to an inpatient or outpatient bed where close monitoring is available.

**NOTE: The procedure usually is a 3-day (non-consecutive) trial, involving daily lumbar punctures to inject predetermined doses of Baclofen and documenting the candidate's response to the injection, while observing for untoward effects.**

2. Consult the anaesthetist who will be performing the lumbar punctures and administering the Baclofen.
3. Ensure that consent for procedure "Lumbar Puncture(s) for Administration of Intrathecal Baclofen" has been obtained by physician.
4. Provide and reinforce teaching of trial procedure to allay anxiety.
5. Don appropriate PPE.
6. Insert Saline lock (20 or 22 gauge) to provide emergency IV access.
7. Set up oxygen and suction equipment at bedside. Resuscitative equipment should be readily available.
8. Assess, along with physician, patient's muscle tone and spasms according to the "Ashworth Scale" and "Spasm Frequency Scale" for baseline data, and document same on flow sheet. (See Appendices 2 and 3).
9. Obtain patient's blood pressure, pulse and respiratory rates and document accordingly.
10. Assist with patient positioning and comfort while physician performs lumbar puncture.

**NOTE: CSF samples are not obtained for laboratory analysis.**

11. Assist as physician administers first injection of intrathecal Baclofen, usually 50 mcg (0.05 mg).
12. Monitor the patient's pulse, respirations and blood pressure within 5 minutes.
13. Provide post injection nursing care.
14. Monitor changes in vital signs, muscle tone and spasms according to the "Ashworth" and "Spasm Frequency" scales, as well as side effects, at the following intervals post injection: ½ hour, 1, 2, 4, and 6 hours.

15. Document on the "Intrathecal Baclofen Screening Procedure" flow sheet (Appendix #3). Report any severe reaction to the physician immediately.

**NOTE: Side effects or signs of overdose include CNS depression, respiratory suppression, hypotension, dizziness, somnolence, excess salivation, nausea and vomiting, and in extreme cases seizures and coma.**

16. Maintain flat bedrest for two hours. The patient may then resume normal level of activity unless otherwise ordered by physician. No dietary restrictions are required pre or post-injection.

**NOTE: Medications are not to be withheld or withdrawn, including oral antispasmodic agents.**

17. Assist with lumbar puncture the next scheduled day. The physician then injects Baclofen 75 mcg (0.075 mg) or next appropriate dose. All monitoring, including pre and post-injection assessments are done according to steps #10 - 16 above. Provide follow-up care as above, unless otherwise ordered by the physician.

18. Evaluate, with physician, the patient's response to intrathecal Baclofen. If a patient responds very successfully to the first 2 injections of intrathecal Baclofen, further test doses will not be required.

**NOTE: If improvement on 75 mcg of Baclofen is minimal or not diagnostic, a third intrathecal injection of 100 mcg (0.1 mg) may be given. (Follow-up care and documentation to be done as in steps #10 - 16.)**

**NOTE: Patient who does not respond to 100 mcg of intrathecal Baclofen may not be a candidate for pump implantation. Patients with spasticity of cerebral origin may require testing doses greater than 100 mcg (0.1 mg).**

**NOTE: Generally, a 2 point or greater improvement on either/both the "Ashworth" or "Spasm Frequency" scales is considered significant and that the patient is a candidate for surgical implantation of the SynchronMed Infusion Pump for continuous infusion of intrathecal Baclofen.**

**REFERENCES:**

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**Keyword(s):** Baclofen

**APPENDIX 1****NURSING PROCEDURE**

Title: Screening Procedure for Intrathecal Baclofen (Lioresal)

**BACKGROUND INFORMATION:**

Increased muscle tone, severe muscle spasms and rigidity may be long term sequelae following spinal cord injury or illness such as multiple sclerosis. Intractable spasticity contributes significantly to the disability and can impair seating, mobility, activities of daily living (ADL) as well as quality of life. It may also result in pressure areas and contractures, adding increased risk for infection and immobility.

Oral antispasmodic medications along with physiotherapy and relaxation techniques are effective for a large number of people. When these methods lose their effectiveness, or if medication side effects are intolerable, intrathecal Baclofen could be considered.

Baclofen is widely prescribed orally but does not readily cross the blood brain barrier. Intrathecal administration of Baclofen produces cerebrospinal fluid (CSF) levels four times higher than those achieved after oral administration at doses 100 times higher. Intrathecal administration greatly reduces unpleasant CNS side effects such as drowsiness, dizziness and confusion, often associated with high oral doses. Following a bolus intrathecal injection a significant reduction in spasticity may be observed within 20 to 40 minutes and lasting up to 10 hours or longer.

The half-life of Baclofen in spinal CSF is approximately 5 hours; this along with its chemical stability makes it acceptable for long term therapy with continuous delivery systems.

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**APPENDIX 2**

## ASHWORTH SCALE

Score	Degree of Muscle Tone
1	No increase in tone.
2	*Slight increase in tone, giving a “catch” when affected part is moved in flexion or extension.
3	More marked increase in tone, but affected part easily flexed.
4	Considerable increase in tone; passive movement difficult.
5	Affected part rigid in flexion or extension.  “catch” may be interpreted as a “jerk” or feeling a mild resistance.

## SPASM FREQUENCY SCALE

Spasm Scale Score	Frequency of Spasms
1	No spasms.
2	Mild spasms induced by stimulation.
3	Infrequent full spasms occurring less than once per hour.
4	Spasms occurring more than 10 times per hour.

**Table 1. Definition of Ashworth and Spasm Scales**

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**APPENDIX 3**



Regina Health District  
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**Screening Procedure  
Intrathecal Baclofen**

\* = See Notes On Reverse

Date / Time	Baclofen Injection	Spasm Scale	Ashworth Scale	Blood Pressure	Pulse	Respiration	Initials
Baclofen: Amount Given							
Pre-Injection Baseline							
DAY #1							
Post Injection: 5 min.							
30 min.							
1 hour							
2 hour							
4 hour							
8 hour							
12 hour							
24 hour							
Date / Time							
Baclofen: Amount Given							
Pre-Injection Baseline							
DAY #2							
Post Injection: 5 min.							
30 min.							
1 hour							
2 hour							
4 hour							
8 hour							
12 hour							
24 hour							
Date / Time							
Baclofen: Amount Given							
Pre-Injection Baseline							
DAY #3							
Post Injection: 5 min.							
30 min.							
1 hour							
2 hour							
4 hour							
8 hour							
12 hour							
24 hour							

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