

Bladder Management for Patients with Neurogenic Bladder Dysfunction

Neurogenic Bladder Dysfunction

Neurogenic bladder is a bladder dysfunction that inhibits normal bladder control. It occurs when the nerves that control the bladder become damaged, often due to an injury or other diseases. Neurogenic bladder causes difficulty with urination, inability to urinate, or inability to store urine.

Purpose of Document:

The purpose of this document is to provide front line health care providers and physicians with guidance to assist and support (empower) patients living with a SCI and their families to develop and / maintain a bladder management routine. This document is geared towards persons with SCI and was adapted from the Alberta Spinal Cord Injury Bladder Management Pathway.

Key Messages:

1. Patients with neurological disease processes and injuries are at risk of acquiring neurogenic bladder. Conditions that may contribute to neurogenic bladder include, but are not limited to:
 - Spinal cord injury
 - Peripheral nerve injury
 - Multiple sclerosis or other demyelinating processes
 - Parkinson disease
 - Stroke
 - Spina bifida
 - Amyotrophic lateral sclerosis
 - Any other disease process that may affect the central or peripheral nervous system and organization/coordination/control of, or communication with the bladder.
2. A neurogenic bladder results in changes to the sensation and control of the bladder and its function. This can result in a bladder that fails to store urine or fails to empty. Neurogenic bladders can lack sensation and can have changes in their muscle tone (areflexic or reflexic).
3. A neurogenic bladder that fails to store urine can result in incontinence and has social implications.
4. A neurogenic bladder that fails to empty can result in kidney damage, overflow incontinence, recurrent urinary tract infections, and pain.

Types of Neurogenic Bladder Dysfunction: Reflexic (spastic) vs Areflexic (flaccid)

Reflexic Neurogenic Bladder

The spinal cord ends around the T12-L1 levels; this is called the conus medullaris. A lesion at or above the conus medullaris can cause a reflexic neurogenic bladder, with spontaneous contraction of the bladder muscles, increased internal bladder voiding pressure, bladder wall hypertrophy with thickening of the bladder walls, and urinary sphincter spasms.

Areflexic Neurogenic Bladder

A lesion below the conus medullaris affects the spinal reflex that controls urination. This causes an areflexic neurogenic bladder, with decreased internal bladder pressure, increased bladder capacity, residual urine retention, and poor bladder contraction.

Both reflexic and areflexic bladders may not empty spontaneously or completely.

Management of Neurogenic Bladder Dysfunction:

Follow Alberta SCI Bladder Management Pathway.

Goals of management of neurogenic bladder include:

1. Ensuring the volume of urine in the bladder remains less than 500 mL at any one time to preserve the integrity of the bladder structure over time and prevent reflux of urine to the kidneys.
2. Maintain dignity and privacy for patients by preventing unplanned bladder evacuation.
3. Balance oral, enteral and parenteral fluid intake to obtain goal urinary output of ~ 2 litres per day.
4. As long as bladder volumes remain less than 500mL at any one time, catheterization schedules may be adjusted to promote engagement in rehabilitation activities and adequate sleep over night by balancing intake.
5. Urine stasis should not be longer than 6 hours.
6. For individuals with newly acquired neurogenic bladder, after removal of indwelling catheter:
 - Initiate: Alberta SCI Bladder Management Pathway Intermittent Catheter Loop.
 - Once routine is established, timing of catheters may be adjusted as long as bladder volumes remain less than 500mL at any one time.

- The bladder routine and changes to the routine should be documented in the patient's health record.
7. Persons with chronic neurogenic bladder, including those with spinal cord injury/impairment, with established bladder management routines should be encouraged to continue their home routine as long as it remains appropriate and effective in the context of the present hospitalization.
- If an indwelling catheter is placed for a short period of time during a hospital stay, the patient may require time to re-establish their routine.
 - If a person with neurogenic bladder exhibits outputs of greater than 2 litres in 24 hours, it may be prudent to place a short-term indwelling catheter while intake is addressed.