

PRACTICE GUIDELINE

Effective Date: **5-21-04**

Manual Reference: **Deaconess Trauma Services**

TITLE: CERVICAL SPINE PRECAUTIONS AND SPINE CLEARANCE

PURPOSE: To define care of the patient requiring cervical spine immobilization and cervical spine precautions as well as to provide guidelines for cervical spine clearance.

GOAL: Early recognition and management of cervical spine injury to minimize complications and severity of injury to return patient to optimal level of functioning while providing for the physical, emotional, and spiritual well being of the patient and their family.

DEFINITIONS:

1. Cervical spine (c-spine) immobilization: The patient should be positioned supine in neutral alignment with no rotation or bending of the spinal column. The cervical spine should be further immobilized with use of a rigid cervical collar.
2. Logroll: Neutral anatomic alignment of the entire vertebral column must be maintained while turning or moving the patient. One person is assigned to maintain manual control of the cervical spine; 2 persons will be positioned unilaterally of the torso to turn the patient towards them while preventing segmental rotation, flexion, extension, and/or lateral bending of the chest or abdomen during transfer of the patient. A fourth person is responsible to remove Long Spine Board (“LSB”), check skin integrity and/or change linens and position padding. Neurologic function must be assessed after each position change.
3. Cervical spine clearance is a clinical decision suggesting the absence of acute bony, ligamentous, and neurologic abnormalities of the cervical spine based on history, physical exam and/or negative radiologic studies.
4. Definitive care of a known cervical spine injury is adequately stabilizing the c-spine. This can include surgical fixation, surgical decompression, and/or any number of cervical stabilization devices (Halo fixation/cervical collars).

GUIDELINES:

1. Any patient with known or suspected cervical spine injury will have cervical spine immobilization and spine precautions maintained until injury can be ruled out, spine is cleared or definitive care is achieved. The cervical collar is not to be removed from the patient’s neck until C-spine is cleared and an order is received from the physician.
2. LSB should be removed as soon as possible even if spine has not been cleared per physician order, as these devices are not required to maintain spinal alignment and can lead quickly to skin breakdown (goal is less than 20 minutes).
3. Any adult patient without clinical evidence of neurologic injury, alcohol, drug intoxication, altered mental status, or distracting injury is a candidate to have the cervical spine cleared on clinical grounds (NEXUS criteria) including: no midline

posterior neck pain, no tenderness on palpation of spinal processes and no pain on active range of motion.

4. Nursing is responsible to ensure that a physician order is on the chart “addressing spine clearance” upon admission to their unit for all activated trauma patients. If an order is not on the patient’s chart, the primary nurse must obtain order by physician who wrote the admission orders. This includes when the physician cleared the spine on clinical grounds (NEXUS criteria). Isolated trauma patients (non-activated pts) with mechanism or complaints of neck pain must be assessed based on NEXUS criteria and radiologic exams should be completed before removing a collar.
5. Any adult patient who does not meet criteria to have their cervical spine clinically cleared should undergo CT scanning with ≤ 1.25 mm cuts of the entire cervical spine with complete reformats.
6. If CT is normal and patient has no neurological deficit, and there is no ongoing cervical spine tenderness or pain, the C-spine should be cleared. Consider continuing cervical collar/precautions and obtaining MRI for those with neurologic deficit and/or ongoing midline cervical pain or tenderness.
7. If the patient is not evaluable secondary to coma, the CT scan is without abnormality, and the patient has moved all four extremities, the cervical spine should be cleared and spinal precautions removed.
8. If the patient is in a coma and/or neuromuscular blockade, and there is no observed movement of the extremities, patients should be kept in spinal precautions until such movement is observed or until an MRI is obtained.
9. For a patient less than 15 years of age, it is the clinician’s discretion to clear spine based on NEXUS criteria or with radiologic exams. (Suggestion: MRI for unconscious or unevaluable patient).
10. If Mechanism of Injury is consistent with suspected thoracic or lumbar injury, dedicated spiral CT of thoracic and lumbar spine or reformats from visceral CTs should be obtained. Thoracic/lumbar CT may be omitted at the trauma surgeon’s discretion if patient has a reliable exam and is without back pain or tenderness. However, CT of the entire spine should be strongly considered in any patient who has a documented cervical fracture.
11. If any abnormalities are found on any of the radiographs or any neurological deficits attributable to a possible spinal cord injury, then consult neurosurgery surgery for advice on the next appropriate radiologic procedure. The cervical collar should be kept in place and spinal precautions maintained.
12. Patients should be considered to have cervical spine injury if they present with any of the following:
 - a. Blunt force trauma to head, neck or back, MVC, fall, loss of consciousness, or altered mental status.
 - b. Neurologic deficits (weakness/paresthesia) in torso, legs, or arms not explained by peripheral nerve injuries.
 - c. Pain to palpitation of the cervical spine.
 - d. Pain in the cervical spine or paraspinous muscles.
13. RN should notify physician immediately of any changes in neurologic status (weakness, paresthesia) or respiratory compromise.

14. If patient has defined unstable spine fracture (see below), patient should be admitted to step down or higher level of care (ICU) until neurosurgeon agrees with transfer to lower level of care.
 - a. Stable spine injury: Those injuries not associated with a neurologic deficit, not at risk for development of neurologic deficit, and not prone to late collapse (e.g., transverse process fractures, spinous process fracture, minimal compression fracture).
 - b. Unstable spine injury: Any fracture pattern associated with a neurologic deficit, those that are prone to develop a neurologic deficit, or those prone to late collapse (e.g., fracture subluxation/dislocation, burst fractures, or compression fractures with >50% loss of height).

REFERENCES:

- ADVANCED TRAUMA LIFE SUPPORT FOR DOCTORS: American College of Surgeons Committee on Trauma.
- TRAUMA NURSING CORE COURSE, Emergency Nurses Association.
- Deaconess Trauma Guideline Manual, Nursing Protocol for Care of the patient in Spinal Precautions.
- RESOURCES FOR OPTIMAL CARE OF THE INJURED PATIENT: 2014; Committee on trauma American College of Surgeons.

| REVIEWED DATE | REVISED DATE |
|---------------|--------------|
| JAN 2005 | APR 2006 |
| JAN 2006 | JAN 2008 |
| JAN 2007 | SEP 2008 |
| OCT 2011 | OCT 2014 |
| AUG 2014 | JAN 2017 |
| AUG 2016 | FEB 2017 |
| JAN 2018 | |
| JAN 2019 | |
| AUG 2020 | |
| JUNE 2021 | |