



Section: EMS

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Section No: 4.10

Date: March 1, 2016

Title: Spinal Immobilization Protocol

Authorized By: 

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**I. PURPOSE**

Mechanism of injury alone has not been shown to be a predictor for spinal injury. An appropriate patient assessment can be used to determine need for spinal motion restriction.

**II. PROCEDURE:**

Below are two cervical spinal motion restriction selection guidelines. Either may be applied to stable patients between the ages of 18 years and 65 years of age that are clinically sober and do not have altered mental status. Patients who suffer injuries in which cervical spinal injuries are possible and do not meet the below criteria, should have precautions to minimize movement of the spine.

**Selective Cervical Spinal Motion Restriction Patient Selection Procedure 1 (BLS and ALS)**

Cervical spinal motion restriction devices do not need to be applied to:

1. Patients suffering from penetrating trauma with no neurological deficits. Immobilization of penetrating trauma patients may lead to increased mortality, and/or
2. Seat belted patients of collisions (<60 mph) where the airbag has not been deployed and the vehicle's glass is intact.

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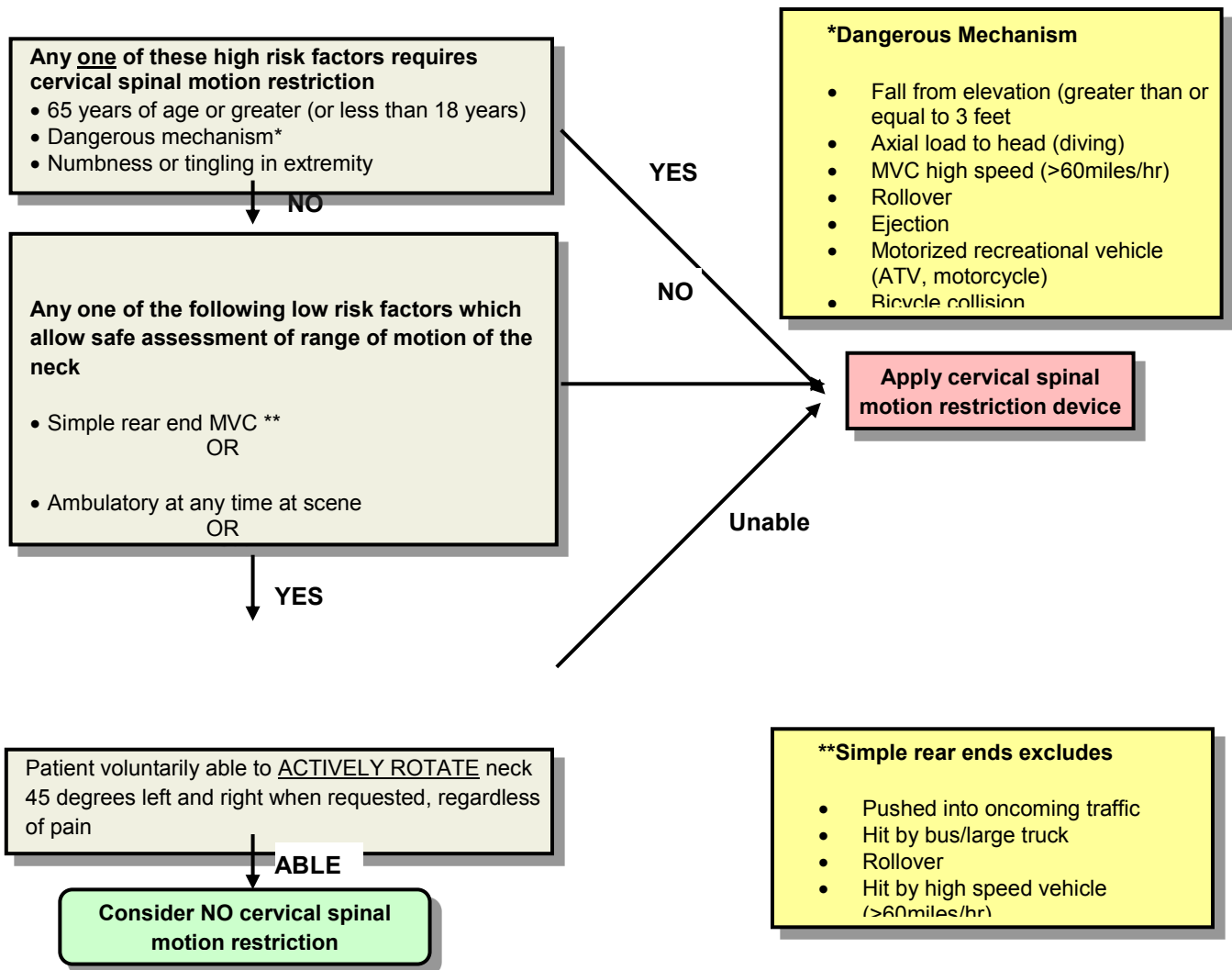
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**Selective Cervical Spinal Motion Restriction Patient Selection Procedure 2 (BLS and ALS)**



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**Thoracic and Lumbar Spinal motion restriction (all ages)**

Based on the patient assessment, some patients will require cervical spinal motion restriction and/or motion restriction of the thoracic and lumbar spine. Traditionally cervical collars have been used to minimize motion of the cervical spine and the long back board has been used to limit motion of the thoracic and lumbar spine.

There is limited data studying spinal motion in patients with applied cervical collars. Patient exiting out of car under their own power, with cervical collar in place, may result in the least amount of motion of the cervical spine.<sup>1</sup> Cervical spinal motion restriction devices include, but are not limited to soft and hard collars.

Long back boards have not been shown to reduce spinal injury complications. In fact, they are associated with increased pain, decubitus development, and possibly decreased functional residual capacity of the lungs. **Long backboards and scoop stretchers are patient transfer devices and not devices for patient transport.** If utilized, patients (all ages) should be removed off the long backboard and scoop stretchers as soon as possible.

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<sup>1</sup> West J Emerg Med. 2009 May; 10(2): 74–78. **Cervical Spine Motion During Extrication: A Pilot Study**

Jeffery S. Shafer, MD, EMTP and Rosanne S. Naunheim, MD

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**Thoracic and Lumbar Spinal Motion Restriction Procedure (BLS and ALS)**

	A	B	EN	I	P
1. Perform general patient management	•	•	•	•	•
2. Apply the cervical spinal motion restriction selection procedure if appropriate  -If cervical motion restriction is not required, patient may ambulate or be moved to stretcher using long backboard, scoop stretcher or other device appropriate for the patient's condition.  -If cervical motion restriction is indicated, follow the steps below.		•	•	•	•
3. Provide manual in-line stabilization of the head and neck.	•	•	•	•	•
4. Apply an appropriately sized cervical spinal motion restriction device (soft or hard collar).	•	•	•	•	•
5. Assess sensory and motor function in all four extremities.	•	•	•	•	•
6. Based on the patient's priority and ability to self extricate or ambulate, safely transfer patient to stretcher					
a. Ambulatory with no back pain.  <b>Apply cervical spinal motion restriction device and ambulate to stretcher</b> *. Encourage patient to limit motion while on stretcher and collar.		•	•	•	•
b. Ambulatory with back pain.  <b>Apply cervical spinal motion restriction device and ambulate to stretcher</b> *. Place patient on back board only if needed to facilitate patient transfer. Remove patient off backboard for transport. Encourage patient to limit motion.		•	•	•	•
c. Non-ambulatory.  <b>Apply cervical spinal motion restriction device and place patient on backboard</b> . Transfer patient to stretcher. Remove patient off backboard for transport. Encourage patient to limit motion.		•	•	•	•
d. Unstable.  Apply cervical spinal motion restriction device and place patient on backboard. Transfer patient to stretcher. If the resources and time available, remove patient off of backboard. If not, maintain patient on backboard. Encourage patient to limit motion.		•	•	•	•
7. If needed use head blocks, towels, and/or straps after positioning to limit cervical spine motion.		•	•	•	•
8. Reassess sensory and motor function in all four extremities. Transport as soon as possible and perform ongoing assessments		•	•	•	•

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Long backboards and scoop stretchers can be utilized to facilitate the transfer of patient on and off the stretcher. Long backboards have not been shown to prevent spinal injury on patients. There are adverse effects associated with the use of long backboards. Remove patients off of the long backboard and scoop stretchers as soon as possible.

\*Have the patient move slowly. If patient develops significant pain, they should not continue to move and potentially aggravate the injury. Use backboard to facilitate the patient transfer to stretcher.

## Key Points: SPINAL MOTION RESTRICTION PATIENT SELECTION

- When in doubt, apply cervical spinal motion restriction device
- EMS providers are expected to use good judgment and may elect to apply cervical spinal motion restriction device to any patient.
- Mechanism of injury alone has not been shown to be a predictor for spinal injury. All patients with a dangerous mechanism of injury, AMS, spine tenderness, distracting injuries, or an unreliable physical exam should be treated in such a manner as to limit spinal motion.

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