

SPINAL IMMOBILIZATION

SPINAL MOTION RESTRICTION - LONG SPINE BOARD

Designation of Condition: Spinal Motion Restriction (SMR) is indicated for trauma patients when there is a suspicion of spinal injury based on mechanism of injury or patient complaining of pain in the area of the spinal cord.

ALL EMS PROVIDERS:

- ✓ EMS First Responders should consider SMR based on training.
- ✓ When in doubt, limit patient movement and provide in-line stabilization until arrival of higher trained personnel.

BLS AND ABOVE PROVIDERS:

- ✓ Patients with a significant mechanism of injury, or who have an altered level of consciousness, or who are complaining of mid-line C-Spine and/or vertebral column pain.
- ✓ Patients who have a significant distracting injury and may not be able to fully perceive and appreciate their pain along the vertebral column.
- ✓ Patients displaying symptoms of neurological deficits after a traumatic incident.
- ✓ Victims of penetrating trauma if:
 - There is evidence of neurological deficit at or below the level of injury
 - There is a suspicion of spinal injury based on the location of the wound

FIELD TREATMENT:

- ✓ For critical patients (blunt or penetrating) that require rapid ground transport, consider the application of *partial immobilization* (place patient onto the long spine board; hand stabilize the head and c-spine; place long spine board and patient onto the gurney; secure the long spine board and patient to gurney with gurney straps) to facilitate rapid loading and transport of the patient. Full SMR may be completed en route if time permits.

- ✓ While backboards have historically been used to attempt spinal immobilization, SMR may also be achieved by use of scoop stretcher, vacuum splint, ambulance cot, or other similar device to which a patient is safely secured. Consider padding (commercial or otherwise) if it does not interfere with SMR.
- ✓ Rigid Cervical Collars - properly sized collars shall be used in conjunction with SMR whenever practical
- ✓ Critical trauma patients shall be extricated using rapid extrication standards - PHTLS
- ✓ With a fully cooperative and stable patient, extricate the patient onto a long board using manual support in conjunction with a C-Collar. Patients who are unconscious should be extricated rapidly using appropriate equipment and personnel for the situation.

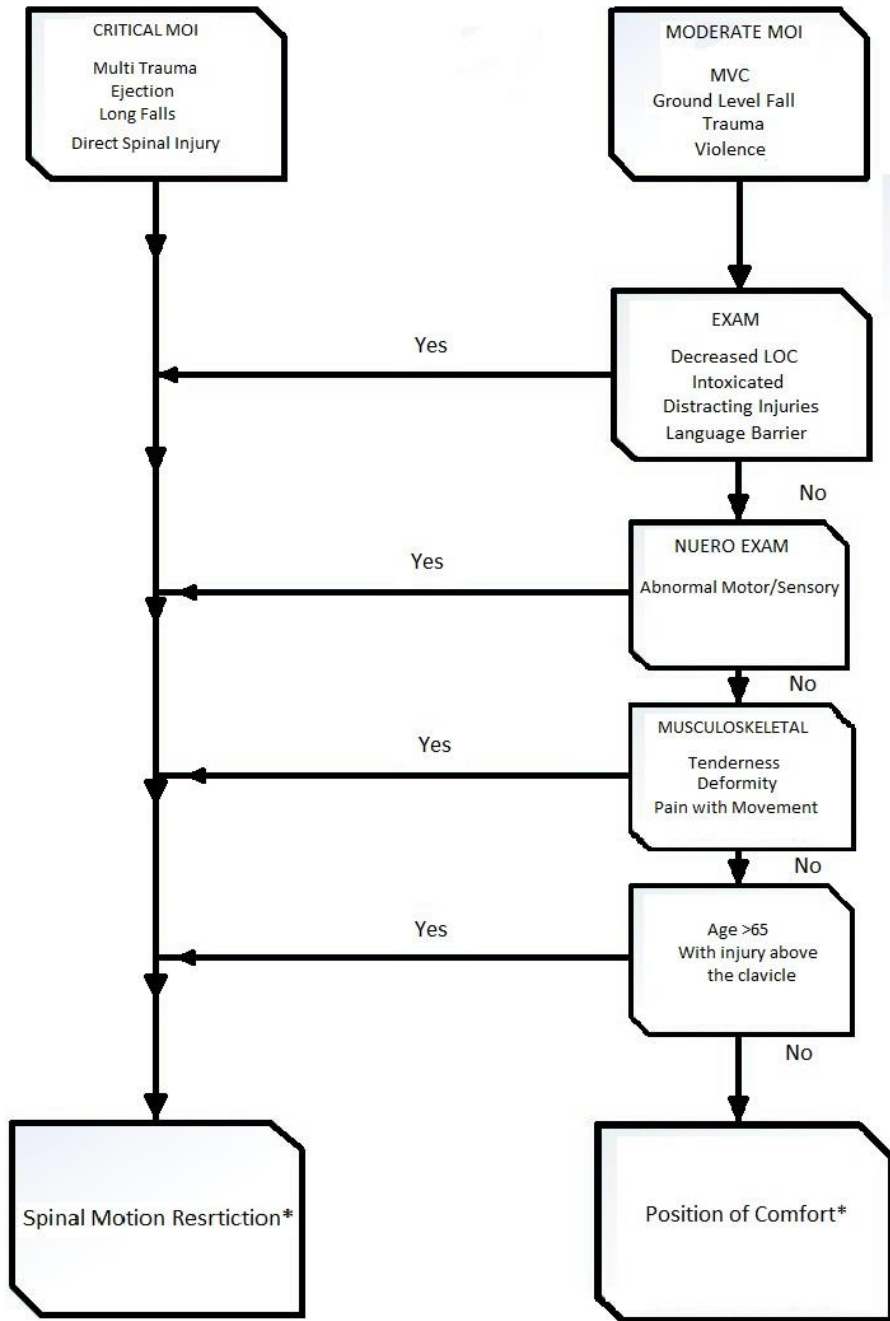
SMR May not be required if:

- ✓ The patient is conscious, alert, oriented, able to perceive pain, neurologically intact, and in progressive order is determined:
 - Not to be suffering from a significant distracting injury
 - Not to be intoxicated or under the influence of mind altering drugs/medications
 - To have no evidence of closed head injury
 - To have no vertebral column pain or discomfort by self-evaluation
 - To have no tenderness of vertebral column on palpation
 - Have no pain or discomfort of vertebral column with active movement (45 degrees rotation left, right, and flexion)
- ✓ The patient has penetrating trauma to the head, neck, or torso and no evidence of spinal injury
- ✓ Spinal precautions can be maintained by application of a rigid cervical collar and securing the patient firmly to the EMS stretcher, and may be most appropriate for:
 - Patients who are ambulatory at the scene
 - Patients who must be transported for a protracted time, particularly prior to inter-facility transfer

- Patients for whom the use of a backboard is not otherwise indicated
- ✓ Whether or not a backboard is used, attention to spinal precautions among at-risk patients is paramount. These include:
 - Application of a cervical collar
 - Adequate security to a stretcher
 - Minimal movement/transfers
 - Maintenance of inline stabilization during any necessary movement/transfers

Remember that SMR is not a benign procedure. You are assuming total control of a patient's airway if you immobilize a patient. Decubitus ulcers may result within 20 minutes in spinal cord injured patients and unconscious patients.

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*Patients with chronic spinal deformities (i.e., kyphosis, scoliosis, ankylosing spondylitis) should be immobilized in their position of comfort with extra padding as needed to prevent hyperextension of the spine. In addition, if the application of a standard cervical collar causes excessive traction/extension of the cervical spine, other means should be utilized to provide appropriate spinal motion restriction.