

**MEHLVILLE FIRE PROTECTION DISTRICT
EMERGENCY MEDICAL SERVICES
GUIDELINES FOR PREHOSPITAL EMERGENCY CARE**

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**SUBJECT: 800.04
TRAUMA:
SPINE INJURY**

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- Spinal Immobilization should be considered any time a patient's body has been subjected to a significant traumatic mechanism. Examples of higher risk mechanisms include but are not limited to:
 - Fall from height greater than 3 feet.
 - Significant motor vehicle accident especially those that occur at high speeds, involve rollover or ejection, have significant intrusion into the passenger compartment or involve the death of an occupant of the vehicle.
 - Significant force applied to the spine or axial loading of the spine such as in a diving accident.
 - Any person struck by a car while walking, riding a bike or riding a motorcycle.
 - It should be noted that the mechanism of injury required to injure the spine is substantially lower in patients older than 65 or in those with bone disorders such as osteoporosis.
 - Spinal immobilization can cause potential harm to the patient and may in some cases delay or impede life saving care. It should not be preformed without the proper justification.
 - **Spinal immobilization will consist of an appropriately sized cervical collar and securing the patient adequately to the stretcher.** Depending on the situation, it may also include vacuum splint/mattress, children's car seats, scoop stretcher, KED, long spine board with adequate padding and head immobilizer with straps. The method selected should minimize gross movement of the spine and discomfort to the patient. The option selected should also allow for adequate airway protection.
 - Backboards may cause pain, respiratory compromise, anxiety and pressure complications. They should only be used as an extrication device or as a firm surface for chest compressions.
 - Self-extrication of a patient may be allowed provided the patient is alert and cooperative and can assist in limiting gross movement of the spine. Apply a cervical collar and ask the patient to maintain spinal neutrality as much as possible while methodically guiding them out of the vehicle/circumstance to a stretcher and/or backboard placed as close as possible to their point of egress.
 - Any patient who undergoes spinal immobilization should have frequent reassessments of their airway and neurologic status.
 - Careful documentation should be done detailing the rationale for the selected method of spinal immobilization or the decision to not use spinal immobilization. This documentation will include a detailed physical exam of the patient's vertebral column, a detailed neurologic exam, an assessment of the patient's mental status and competency, as well as the presence or absence of distracting injuries.

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When deciding the need for spinal immobilization in a patient who has suffered significant traumatic injury, use the following algorithm. If the answer to either of these questions is 'yes', the patient should undergo spinal immobilization. If the answer to both of these questions is 'no', the patient may be transported in a position of comfort.

Step 1 – Is the patient or their exam unreliable?

- To be reliable the patient must be mentally competent with no signs of altered mental status or intoxication.
- To be reliable the patient must not have a distracting injury causing pain that would mask spinal tenderness.
- To be reliable the patient must have no language barriers preventing clear communication with the EMS crew.
- The patient must not have dementia.
- The patient must not be someone **less than 5 years old or greater than 65 years old** who has a significant mechanism of injury. The threshold for significant mechanism of injury is much lower in the elderly.

Step 2 – Does the patient have an abnormal spine or neurologic exam?

- The patient must have no pain to palpation of the vertebral column.
- The patient must not have any pain in the vertebral column with range of motion movement. Do not assess range of motion if the patient has tenderness of the vertebral column or already meets the criteria for spinal immobilization.
- The patient must have no deformities of the spinal column.
- The patient must have no motor or sensory deficits.
- The patient must have no tingling in the extremities, even in the presence of intact sensation.

If there is any uncertainty as to the answers to the questions posed in step 1 or 2, the patient should undergo spinal immobilization.

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Special Circumstances

- Drowning victims should not undergo spinal immobilization unless there is a clear history of trauma discovered in the history or exam. Spinal immobilization (especially if done in the water) may delay life saving resuscitative efforts such as quality chest compressions.
- Routine spinal immobilization for victims of penetrating trauma may delay life saving surgical intervention. Victims of penetrating trauma should not undergo spinal immobilization unless one of the following conditions is met:
 - Obvious neurologic deficit in the extremities
 - Significant secondary blunt mechanism of injury (ex: fall down the stairs after sustaining a gunshot wound)
 - Priapism
 - Neurogenic shock
 - Anatomic deformity to the spine secondary to the injury
- Patients who are ambulatory at the scene and who meet the criteria for spinal immobilization may be assisted to a nearby stretcher and immobilized. Ambulatory patients should not be placed on a backboard. A cervical collar should be applied and they can be secured adequately to the stretcher.
- Infants restrained in a rear facing car seat may be extricated and immobilized in the car seat. They may remain there if they are secure and their condition allows.
- Combative patients should be immobilized in a way that does not provoke increased spinal movement or combativeness. These cases should be carefully documented.
- Spinal immobilization on a backboard can limit respiratory function especially in pediatric and elderly patients. It should be used with caution in any patient with acute or chronic shortness of breath.