

# SPINAL MOTION RESTRICTION (SMR)

## ALL PROVIDERS

### Assessment

- Assess the scene, to determine the risk of injury. Mechanism alone should not determine if a patient requires SMR. However, mechanisms that have been associated with a higher risk of cervical spine injury are the following:
  - Motor vehicle collisions, including automobiles, motorcycles, ATVs, and snowmobiles
  - Axial loading injuries to the spine, such as diving accidents
  - Severe injuries to the torso
  - Falls >10 feet
- Assess the patient in the position in which he/she was found. Initial assessment should focus on determining if a cervical collar must be applied.
- Assess for mental status, neurologic deficits, spinal pain or tenderness, any evidence of intoxication, or other severe/painful injuries

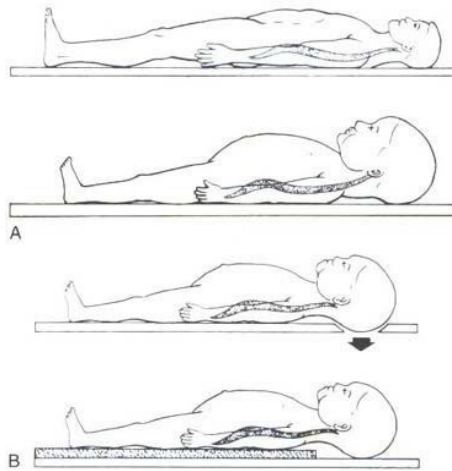
### Treatment Plan

- Perform full SMR if there are any of the following:
  - Patient complains of midline neck or back pain
  - Any midline neck or spinal tenderness with palpation
  - Any anatomic deformity of the spine
  - Any abnormal mental status (including extreme agitation)
  - Any neurologic deficit
  - Any evidence of alcohol or drug intoxication
  - Another severe or painful distracting injury is present
  - Torticollis (stiff or painful movement of the neck) in children
  - A communication barrier that prevents accurate assessment
- If none of the above apply, a cervical collar does not need to be placed on the patient, unless the treating medic otherwise feels there is a high risk of cervical spine injury.
- Patients with a penetrating injury to the neck should not have a cervical collar placed, regardless of whether they are exhibiting neurologic symptoms. Doing so can lead to delayed identification of injury or airway compromise and has been associated with increased mortality in such patients.
- Extrication:
  - From a vehicle: After placing a cervical collar, if indicated as above, adults and children in a booster seat should be allowed to self-extricate, if they are able. For infants and toddlers already strapped in a car seat with a built-in harness, remove the car seat and infant together, leaving the infant secured in the car seat.
  - Other situations requiring extrication: A padded long board may be used for extrication, using the lift and slide technique.
- Helmet removal:
  - If a helmet needs to be removed, it is recommended to remove the face mask followed by manual removal (rather than the use of automated devices) of the helmet, while keeping neck motion manually restricted. Occipital padding should be applied, as needed, with the patient in a supine position, in order to maintain neutral cervical spine positioning.
- Patients should NOT routinely be transported on long boards, unless the clinical situation specifically warrants long board use. Padded scoop stretchers, vacuum splints, or a secured ambulance cot are all appropriate options for SMR. An example of an indication for long board use may be facilitation of immobilization of multiple extremity injuries or an unstable patient where removal of a board will delay transport and/or other treatment priorities. In these rare situations, long boards should be padded or have a vacuum mattress applied to minimize secondary injury to the patient.
- Assess neurological function before, during, and after application of SMR.

### Key Considerations

- Patients who have a low likelihood of spinal injury and are therefore not likely to benefit from SMR, should not be immobilized.

- Patients should be "log rolled," with maintenance of spinal alignment, for examination of the spine for tenderness and deformities.
  - Ambulatory patients who are alert and cooperative may be safely immobilized on a gurney with cervical collar and straps and will not generally require a spine board.
- ☐ Pediatric Considerations
- Age <2 should be secured in a car seat or age-appropriate papoose device.
  - Children who are <5 years old should be secured with an appropriately sized cervical collar or soft towel rolls and tape, if tolerated. If attempts at SMR result in more distress and fighting to get free, then the SMR should be utilized.
  - Children <8 years old cannot have their cervical spines reliably assessed in the field and should have the cervical spine immobilized if the mechanism warrants it.
  - Children do not require full SMR if isolated injury to the cervical spine is suspected as their risk for noncontiguous spinal injuries is much lower than adults.
  - Use a pediatric specific backboard for those <8 years old OR use a towel or pad to raise the child's body (not their head) to insure appropriate spinal alignment on an adult board. (See figure below)
- ☉ Contact OLMC for further instructions if the patient refuses immobilization despite the provider's assessment for the need for SMR.



**ADULT**

**PEDIATRIC (<15 years of Age)**  
**NOTE: Pediatric weight based dosing should not exceed Adult dosing.**

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AEMT
PARAMEDIC

EMT
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